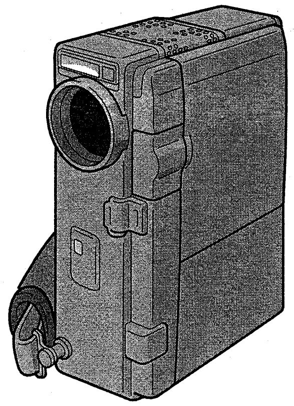
JVC

SERVICE MANUAL

DIGITAL VIDEO CAMERA

GR-DVX7EG/EK



Mini DV PAL

DSC DIGITAL STILL CAMERA

TranP

SPECIFICATIONS *(The specifications shown pertain specifically to the model GR-DVX7EK)*

Camcorder

For General

Power supply	: DC 6.3 V ⎓ (Using the AC Power Adapter/Charger) DC 7.2 V ⎓ (Using battery pack)
Power consumption	
LCD monitor off, viewfinder on	: Approx. 4.5 W
LCD monitor on, viewfinder off	: Approx. 5.4 W
Dimensions	: 48 (W) x 119 (H) x 89 (D) mm (with the LCD monitor closed and the viewfinder pushed back in)
Weight	: Approx. 440 g (without grip strap, cassette, MultiMediaCard and battery) Approx. 525 g (incl. grip strap, cassette, MultiMediaCard and battery)
Operating temperature	: 0°C to 40°C
Operating humidity	: 35% to 80%
Storage temperature	: –20°C to 50°C
Pickup	: 1/4" CCD
Lens	: F 1.8, f = 3.6 to 36 mm, 10:1 Power Zoom Lens
Filter diameter	: ø27 mm
LCD monitor	: 2.5" diagonally measured, LCD panel/TFT active matrix system
Viewfinder	: Electronic viewfinder with 0.55" colour LCD
Speaker	: Monaural

For Digital Video Camera

Format	: DV Format (SD mode)
Signal format	: PAL Standard
Video signal recording format	: Digital Component Recording
Cassette	: Mini DV Cassette
Tape Speed	: SP: 18.8 mm/s LP: 12.5 mm/s
Maximum recording time	: SP: 60 min. LP: 90 min. (using M-DV60ME cassette)

For Digital Still Camera

Storage media	: MultiMediaCard
Compression system	: JPEG (compatible)
Picture quality	: 3 modes (FINE/STANDARD/ECONOMY)
Number of storable images (with the provided MultiMediaCard [4 MB])	
FINE	: Approximately 30
STANDARD	: Approximately 50
ECONOMY	: Approximately 100
Infrared transmitter/receiver	: IrDA Ver. 1.0 (IrTran-P compatible)

For Connectors

Video output	: 1 Vp-p, 75 Ω unbalanced, analogue output (via AV OUT connector)
Audio output	: –8 dBs, 1 kΩ analogue output, stereo (via AV OUT connector)
Headphone output	: ø3.5 mm, stereo (via AV OUT connector)
DV output	: 4-pin, IEEE1394 compliant

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

AC Power Adapter/Charger AA-V50EK

Power requirement	: AC 110 V to 240 V∿, 50/60 Hz
Power consumption	: 20 W
Output	
Charge	: DC 7.2 V ⎓, 0.63 A
VTR	: DC 6.3 V ⎓, 1.8 A
Dimensions	: 122 (W) x 39 (H) x 92 (D) mm
Weight	: Approx. 380 g

Docking Station CU-V501E

For General

Dimensions	: 115 mm (W) x 31 mm (H) x 55 mm (D)
Weight	: Approx. 90 g

For Connectors

S-Video	: Y : 1Vp-p, 75 Ω, analogue output C : 0.29 Vp-p, 75 Ω, analogue output
Video	: 1Vp-p, 75 Ω, analogue output
Audio	: –8 dBs, 1 kΩ, analogue output
JLIP	: ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Editing	: ø3.5 mm, 2-pole
PC	: ø2.5 mm, 3-pole
External microphone input	: –68 dBs, high impedance unbalanced with ø3.5 mm (stereo)

E & O.E. Design and specifications subject to change without notice.

COPYRIGHT © 1999 VICTOR COMPANY OF JAPAN, LTD.

No. 86494
April 1999

TABLE OF CONTENTS

Section Title Page

Important Safety Precautions
INSTRUCTIONS
1. DISASSEMBLY
1.1 BEFORE ASSEMBLY AND DISASSEMBLY 1-1
1.1.1 Precautions 1-1
1.1.2 Assembly and disassembly 1-1
1.1.3 Disconnection of Connectors (Wires) 1-1
1.1.4 Main screws to deal with disassembly/assembly 1-2
1.2 TOOLS AND EQUIPMENTS REQUIRED FOR ADJUSTMENTS 1-2
1.2.1 Tools required for adjustments 1-2
1.2.2 Equipments required for adjustments 1-3
1.3 DISASSEMBLY/ASSEMBLY OF CABINET PARTS 1-4
1.3.1 Disassembly flow chart 1-4
1.3.2 Disassembly method 1-4
1.4 DISASSEMBLY/ASSEMBLY OF MONITOR ASSEMBLY 1-10
1.5 DISASSEMBLY/ASSEMBLY OF OP BLOCK 1-11
1.5.1 Replacing CCD image sensor 1-11
1.5.2 Replacing service parts 1-11
1.6 CONNECTION OF CONNECTORS 1-12
1.7 CONNECTION OF CONNECTORS (PATCH CORDS) LIST 1-13
1.8 HOW TO TAKE OUT CASSETTE TAPE MANUALLY 1-14
1.9 SERVICE NOTE 1-15
1.10 REGARDING STROBE LIGHT EMITTING CAPACITOR 1-16
1.11 PRECAUTIONS ON HANDLING THE LITHIUM SECONDARY BATTERY 1-16
1.12 EMERGENCY DISPLAY 1-16

2. MECHANISM ADJUSTMENT
2.1 PRELIMINARY REMARKS ON ADJUSTMENT AND REPAIR 2-1
2.1.1 Precautions 2-1
2.1.2 Necessary jigs 2-1
2.1.3 Notes on disassembling/reassembling procedure 2-1
2.1.4 Screws and washers used in mechanism 2-1
2.2 DISASSEMBLING/REASSEMBLING MECHANISM ASSEMBLY 2-2
2.2.1 General statement 2-2
2.2.2 Explanation of mechanism mode 2-2
2.2.3 Mechanism timing chart 2-3
2.2.4 Disassembling/reassembling mechanism assembly 2-4
2.2.5 Disassembling/reassembling 2-7
2.2.6 List of procedures for disassembly 2-13
2.2.7 Checkup and adjustment of mechanism phase 2-14
2.2.8 Reassembling slide deck assembly and main deck assembly 2-15
2.2.9 Locating tension pole 2-16
2.3 PROCEDURE OF COMPATIBILITY AND P.B. EQ. (ERROR RATE) ADJUSTMENTS 2-17
2.3.1 Precautions 2-17
2.3.2 Preparation for adjustment 2-17
2.3.3 Linearity adjustment 2-18
2.3.4 PB switching point adjustment 2-18
2.3.5 Head REC current adjustment 2-18
2.3.6 P.B. EQ. (error rate) adjustment (for SP and LP) 2-19
2.3.7 Measurement method of P.B. EQ. (error rate) 2-19
2.4 SERVICE NOTE 2-20

3. ELECTRICAL ADJUSTMENT
3.1 ELECTRICAL ADJUSTMENT 3-1
3.1.1 Precautions 3-1
3.1.2 Test instruments required for electrial adjustment 3-1
3.1.3 Jigs and tools required for electrical adjustment 3-1
3.1.4 Setup 3-1

4. CHARTS AND DIAGRAMS
NOTES OF SCHEMATIC DIAGRAM 4-1
CIRCUIT BOARD NOTES 4-2
4.1 BOARD INTERCONNECTIONS 4-3
4.2 SYSCON SCHEMATIC DIAGRAM 4-5
4.3 SERVO SCHEMATIC DIAGRAM 4-7
4.4 AUDIO AD/DA SCHEMATIC DIAGRAM 4-9
4.5 MAIN AUDIO SCHEMATIC DIAGRAM 4-11
4.6 A/HP SEL SCHEMATIC DIAGRAM 4-13
4.7 ANR-DET SCHEMATIC DIAGRAM 4-15
4.8 ST SENS SCHEMATIC DIAGRAM 4-16
4.9 V OUT SCHEMATIC DIAGRAM 4-17
4.10 DV MAIN SCHEMATIC DIAGRAM 4-19
4.11 DV EQ SCHEMATIC DIAGRAM 4-21
4.12 PRE/REC SCHEMATIC DIAGRAM 4-23
4.13 Y/C SCHEMATIC DIAGRAM 4-25
4.14 DC/DC SCHEMATIC DIAGRAM 4-27
4.15 VF MAIN SCHEMATIC DIAGRAM 4-29
4.16 MAIN CIRCUIT BOARD 4-30
4.17 IR SCHEMATIC DIAGRAM 4-34
4.18 MDA SCHEMATIC DIAGRAM 4-35
4.19 IRIS & AF/ZOOM SCHEMATIC DIAGRAM 4-37
4.20 MDA CIRCUIT BOARD 4-39
4.21 IRDA AND CCD SCHEMATIC DIAGRAMS 4-41
4.22 TG CDS SCHEMATIC DIAGRAM 4-43
4.23 CCD CIRCUIT BOARD 4-45
4.24 VF BL SCHEMATIC DIAGRAM AND VF BL CIRCUIT BOARD 4-47
4.25 MONITOR SCHEMATIC DIAGRAM 4-49
4.26 MONITOR CIRCUIT BOARD 4-51
4.27 DSC SCHEMATIC DIAGRAM 4-53
4.28 DSC CIRCUIT BOARD 4-55
4.29 STROBE SCHEMATIC DIAGRAM AND STROBE CIRCUIT BOARD 4-57
4.30 W/B SCHEMATIC DIAGRAM AND W/B CIRCUIT BOARD 4-59
4.31 JACK SCHEMATIC DIAGRAM AND CIRCUIT BOARD 4-60
4.32 OPERATION UNIT AND SUB OPERATION UNIT SCHEMATIC DIAGRAMS 4-61
4.33 VIDEO SYSTEM BLOCK DIAGRAM 4-63
4.34 AUDIO BLOCK DIAGRAM 4-67
4.35 POWER SYSTEM BLOCK DIAGRAM 4-69
4.36 REGULATOR SYSTEM BLOCK DIAGRAM 4-71
4.37 VOLTAGE CHARTS 4-73

5. PARTS LIST
5.1 PACKING ASSEMBLY <M1> 5-1
5.2 FINAL ASSEMBLY <M2> 5-3
5.3 MECHANISM ASSEMBLY <M3> 5-7
5.4 ELECTRICAL PARTS LIST 5-9
MAIN BOARD ASSEMBLY <01> 5-9
MDA BOARD ASSEMBLY <02> 5-18
CCD BOARD ASSEMBLY <03> 5-20
MONITOR BOARD ASSEMBLY <04> 5-20
VF BL BOARD ASSEMBLY <05> 5-21
DSC BOARD ASSEMBLY <06> 5-22
STROB BOARD ASSEMBLY <07> 5-23
W/B BOARD ASSEMBLY <08> 5-23
JACK BOARD ASSEMBLY <09> 5-23
OPERATION UNIT <10> 5-23

6. AC POWER ADAPTER (AA-V50EG/EK)
6.1 CABINET ASSEMBLY <MA> 6-1
6.2 SCHEMATIC DIAGRAM 6-2
6.3 CIRCUIT BOARD 6-4
6.4 ELECTRICAL PARTS LIST 6-5

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

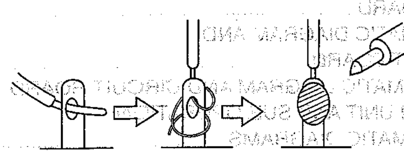


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

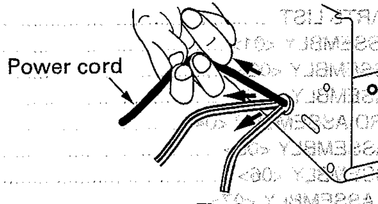


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission.
    Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits.
    Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number :** E03830-001
    2) **Required tool :** Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

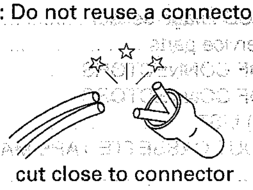


Fig.3

       (2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

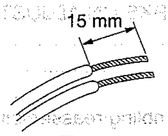


Fig.4

       (3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

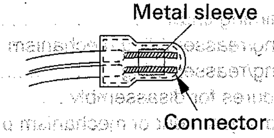


Fig.5

       (4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

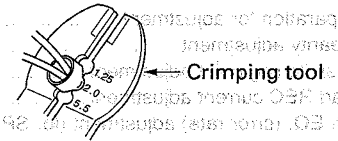


Fig.6

       (5) Check the four points noted in Fig.7.

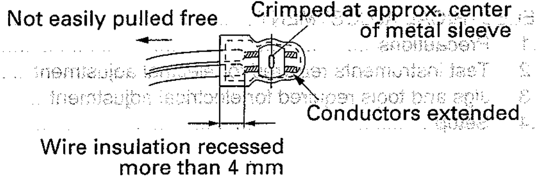

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

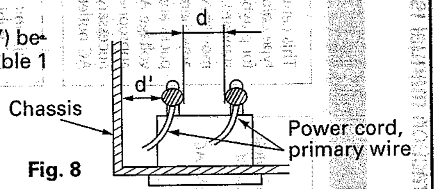


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method : (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

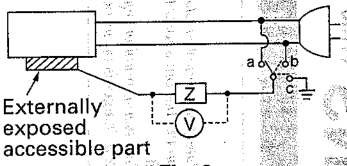


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

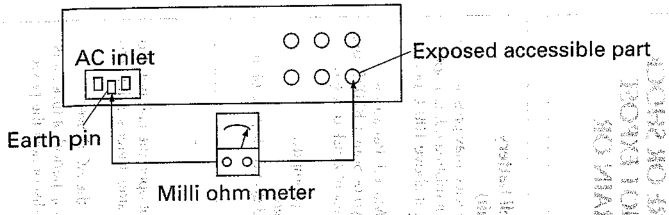


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class 2) AC 1.5 kV 1 minute (Class 1)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

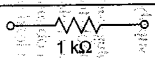
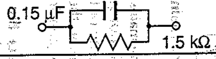
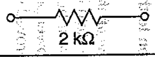
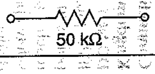
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan		i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada		i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia		i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
			i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS (This instraction manual is for the GR-DVX7EK)

Dear Customer,
Thank you for purchasing this digital video camera. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of this product.

Using This Instruction Manual
- All major sections and subsections are listed in the Table Of Contents (☞ cover page).
- Notes appear after most subsections. Be sure to read these as well.
- Basic and advanced features/operation are separated for easier reference.

It is recommended that you . . .
.... refer to the Index (☞ pgs. 99 – 106) and familiarize yourself with button locations, etc. before use.
.... read thoroughly the Safety Precautions. They contain extremely important information regarding the safe use of this product.

You are recommended to carefully read the cautions on pages 107 and 108 before use.

SAFETY PRECAUTIONS

IMPORTANT

Connection to the mains supply in the United Kingdom.
DO NOT cut off the mains plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.
BE SURE to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover.
If nonetheless the mains plug is cut off be sure to remove the fuse and dispose of the plug immediately, to avoid possible shock hazard by inadvertent connection to the mains supply.
If this product is not supplied fitted with a mains plug then follow the instructions given below:
DO NOT make any connection to the Larger Terminal coded E or Green.
The wires in the mains lead are coloured in accordance with the following code:

Blue to N (Neutral) or Black
Brown to L (Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a competent electrician.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

Warning on lithium cell battery (for remote control unit)
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace the battery with Maxell, Panasonic (Matsushita Electric), Sanyo or Sony CR2025; use of another battery may present a risk of fire or explosion.
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

CAUTIONS:
- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC Power Adapter/Charger for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

NOTES:
- *The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.*
- *The rating plate (serial number plate) of the AC Power Adapter/Charger is on its bottom.*

This camcorder is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording and LCD monitor/viewfinder playback are possible anywhere. Use the BN-V507U/V514U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

This unit is produced to comply with Standard IEC Publ. 65.

SOME DO'S AND DON'TS ON THE SAFE USE OF EQUIPMENT

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO	read the operating instructions before you attempt to use the equipment.
DO	ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.
DO	consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.
DO	be careful with glass panels or doors on equipment.
DON'T	continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off, withdraw the mains plug and consult your dealer.
DON'T	remove any fixed cover as this may expose dangerous voltages.
DON'T	leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.
DON'T	use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.
DON'T	listen to headphones at high volume, as such use can permanently damage your hearing.
DON'T	obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.
DON'T	use makeshift stands and NEVER fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.
DON'T	allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL
— NEVER let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock;
— NEVER guess or take chances with electrical equipment of any kind — it is better to be safe than sorry!

SAFETY PRECAUTIONS

Do not point the lens or the viewfinder directly into the sun. This can cause eye injuries, as well as lead to the malfunctioning of internal circuitry. There is also a risk of fire or electric shock.

CAUTION!

The following notes concern possible physical damage to the camcorder and to the user.

When carrying, be sure to always attach and use the provided hand strap. Hold the camcorder firmly in your hand, with the strap securely around your wrist. Carrying or holding the camcorder by the viewfinder and/or the LCD monitor can result in dropping the unit, or in a malfunction.

Take care not to get your finger caught in the cassette cover. Do not let children operate the camcorder, as they are particularly susceptible to this type of injury.

Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the camcorder.

CAUTION!

Attaching the camcorder to the Docking Station with cables (Audio/Video, S-Video, Editing, DC, etc.) connected, then leaving it on top of the TV is not recommended, as tripping on the cables will cause the camcorder to fall, resulting in damage.

Mini DV PAL **MultiMediaCard**

- This camcorder is designed exclusively for the digital video cassette and MultiMediaCard. Only cassettes marked "Mini DV" and memory cards marked "*MultiMediaCard*" can be used with this unit.

Before recording an important scene . . .

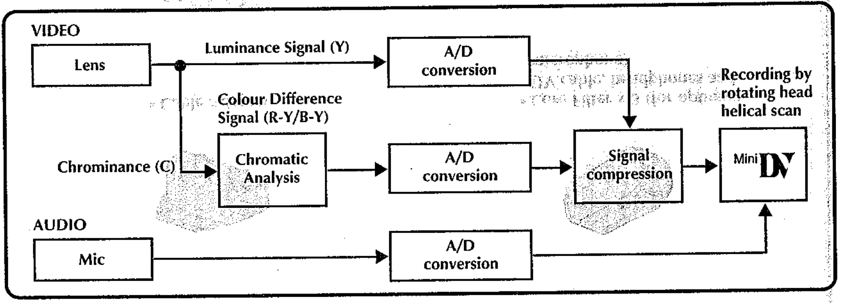
... make sure you only use cassettes with the Mini DV mark Mini DV.
... make sure you only use memory cards with the mark *MultiMediaCard*.
... remember that this camcorder is not compatible with other digital video formats.
... remember that this camcorder is intended for private consumer use only. Any commercial use without proper permission is prohibited. (Even if you record an event such as a show, performance or exhibition for personal enjoyment, it is strongly recommended that you obtain permission beforehand.)

ABOUT DV

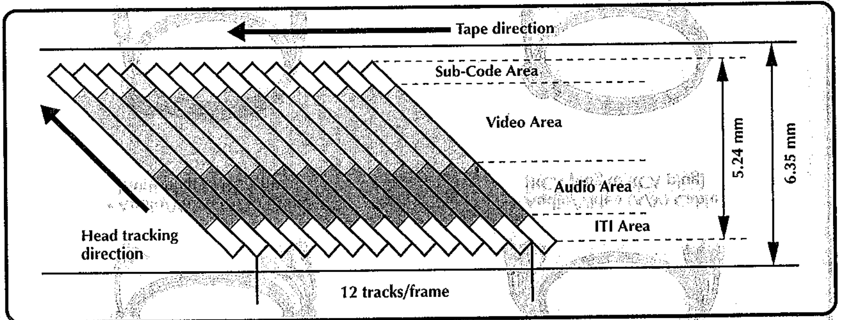
The digital camcorder converts incoming audio and video signals into digital form for recording.

A video signal is composed of a luminance signal (Y) and colour signals (R-Y and B-Y). These signals are identified and recorded digitally (Digital Component Recording). The A/D (Analogue to Digital) converter samples the Y signal at 13.5 MHz, and R-Y and B-Y at 6.75 MHz, and changes them to an 8-bit quantum signal.

Sound sampled at 48 kHz is changed to a 16-bit quantum signal, and sound sampled at 32 kHz is converted to a 12-bit signal.


VIDEO
Lens
Luminance Signal (Y)
A/D conversion
Colour Difference Signal (R-Y/B-Y)
Recording by rotating head helical scan
Chrominance (C)
Chromatic Analysis
A/D conversion
Signal compression
Mini DV
AUDIO
Mic
A/D conversion

This camcorder separates the data into blocks, writing one block of each data type on each track of the tape.


Tape direction
Sub-Code Area
Video Area
Audio Area
ITI Area
5.24 mm
6.35 mm
Head tracking direction
12 tracks/frame

❶ Sub-Code Area

The Time Code and Date/Time data are written here, separate from the video data. This enables you to display the date and time during playback, even if they weren't displayed while recording.

❷ Video Area

The digital video signal is recorded here.

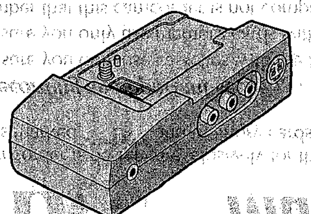
❸ Audio Area

The digital audio signal is recorded here.

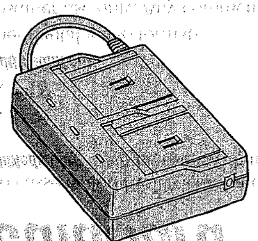
❹ ITI (Insert and Tracking Information) Area

Insert editing and post-recording editing tracking signals are recorded here.

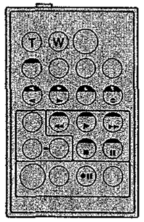
PROVIDED ACCESSORIES



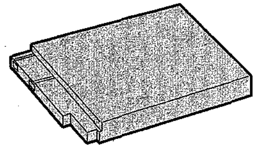
• **Docking Station CU-V501E**



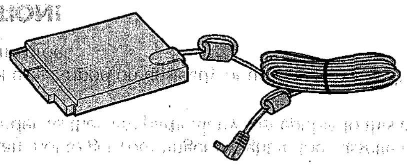
• **AC Power Adapter/Charger AA-V50EK**



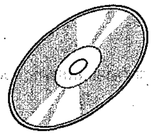
• **Remote Control Unit RM-V713U**



• **Battery Pack BN-V507U**



• **DC Cord**

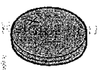


• **CD-ROM**
The CD ROM contains the following 7 software programmes:

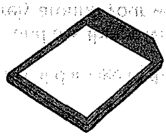
- **JLIP Video Capture**
- **JLIP Video Producer**
- **Picture Navigator (for Windows®)**
- **Picture Navigator (for Macintosh®)**

Presto!

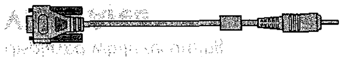
- **Mr. Photo**
- **PhotoAlbum**
- **ImageFolio**



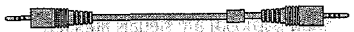
• **Lithium Battery CR2025 (for remote control unit)**



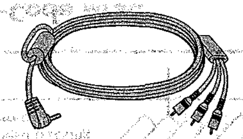
• **MultiMediaCard**



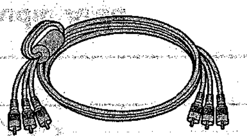
• **PC Connection Cable**



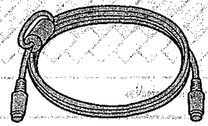
• **JLIP Cable**



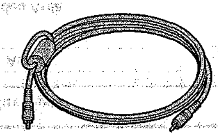
• **Audio/Video (A/V) Cable [mini-plug to RCA plug]**



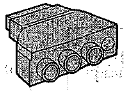
• **Audio/Video (A/V) Cable [RCA plug to RCA plug]**



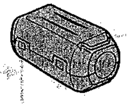
• **S-Video Cable**



• **Editing Cable**



• **Cable Adapter**



• **Core Filter x 3 (for optional DV cable, headphones and microphone)**

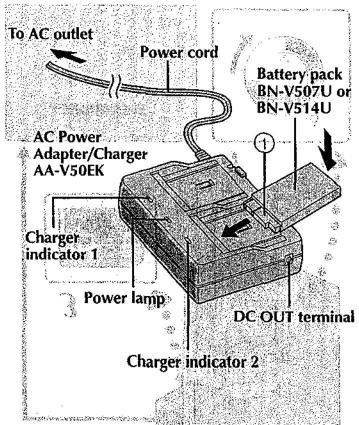
• **Cleaning Cloth**

Power

This camcorder's 2-way power supply system lets you choose the most appropriate source of power.

NOTES:

- *No function is available without power supply.*
- *Use only specified power supply.*
- *Do not use provided power supply units with other equipment.*



CHARGING THE BATTERY PACK

1 SUPPLY POWER TO CHARGER

Make sure you unplug the camcorder's DC cord from the AC Power Adapter/Charger.
Plug the AC Adapter/Charger's power cord into an AC outlet. The power lamp comes on.

2 ATTACH BATTERY/BATTERIES

Attach the battery pack while making sure its terminal side ① is in contact with the indicator side of the battery pack mount on the AC Power Adapter/Charger.

- The Charger Indicator (1 or 2) begins blinking to indicate charging has started.

3 CONFIRM STATUS

When the charger indicator stops blinking but stays lit, charging is finished.

- If two batteries are attached to the charger, they will be charged in the order that they were attached.

4 DETACH BATTERY/BATTERIES

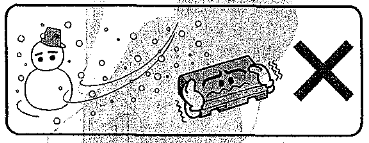
Slide the battery or batteries in the opposite direction of the arrow and lift off. Remember to unplug the AC Adapter/Charger's power cord from an AC outlet.

Charging time

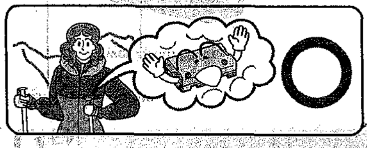
Battery pack	ONE	TWO
BN-V507U	approx. 1 hr. 30 min.	approx. 3 hrs.
BN-V514U (optional)	approx. 3 hrs.	approx. 6 hrs.

NOTES:

- *Perform charging where the temperature is between 10° and 30°C. 20° to 25°C is the ideal temperature range for charging. If the environment is too cold, charging may be incomplete.*
- *Charging times noted above are for fully discharged battery pack.*
- *Charging time varies according to the ambient temperature and the status of the battery pack.*
- *To avoid interference with reception, do not use the AC Power Adapter/Charger near a radio.*
- *If you connect the camcorder's DC cord to the adapter during battery charging, power is supplied to the camcorder and charging stops.*
- *Since the AC Power Adapter/Charger processes electricity internally, it becomes warm during use. Be sure to use it only in well-ventilated areas.*
- *When charging the battery pack for the first time or after a long storage period, the charger indicator may not light. In this case, remove the battery pack from the AC Power Adapter/Charger, then try charging again.*
- *If the battery operation time remains extremely short even after having been fully charged, the battery is worn out and needs to be replaced. Please purchase a new one.*



Lithium-ion is vulnerable in colder temperatures.



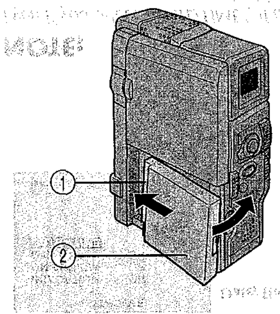
About Batteries

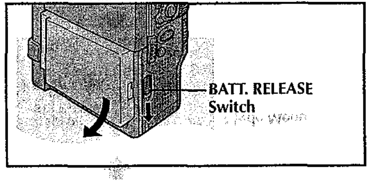
DANGER! Do not attempt to take the batteries apart, or expose them to flame or excessive heat, as it may cause a fire or explosion.

WARNING! Do not allow the battery or its terminals to come in contact with metals, as this can result in a short circuit and possibly start a fire.

The Benefits Of Lithium-Ion Batteries

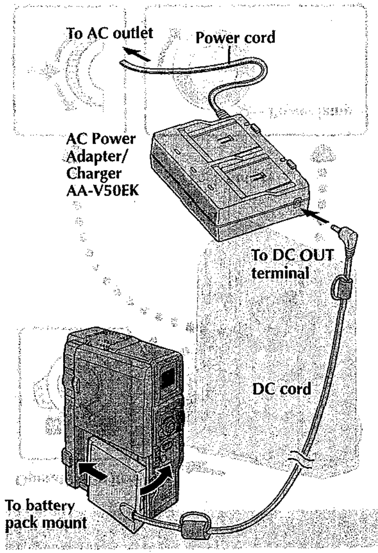
Lithium-ion battery packs are small but have a large power capacity. However, when one is exposed to cold temperatures (below 10° C), its usage time becomes shorter and it may cease to function. If this happens, place the battery pack in your pocket or other warm, protected place for a short time, then re-attach it to the camcorder. As long as the battery pack itself is not cold, it should not affect performance.
(If you're using a heating pad, make sure the battery pack does not come in direct contact with it.)





ATTENTION:

Before detaching the power source, make sure that the camcorder's power is turned off. Failure to do so can result in a camcorder malfunction.



USING THE BATTERY PACK

1 ATTACH BATTERY PACK

Insert the terminal end ① of the battery pack into the battery pack mount, then firmly push the end ② of the battery pack in the direction of the arrow until it locks into place as shown in the illustration.

- If the battery pack is attached in the wrong position, a malfunction may occur.

To Detach The Battery Pack . . .
. . . while sliding down **BATT. RELEASE**, detach it.

NOTES:

- *Continuous shooting is possible when the temperature is approx. 20°C.*
- *However, continuous shooting capability is reduced significantly under the following conditions:*
  - *The temperature is below 10°C.*
  - *Zoom or Record-Standby mode is engaged repeatedly.*
  - *The LCD monitor is used repeatedly.*

Before extended use, it is recommended that you prepare enough battery packs to cover 3 times the planned shooting time.

Approximate recording time

Battery pack	LCD monitor on/ Viewfinder off	LCD monitor off/ Viewfinder on
BN-V507U	55 min.	65 min.
BN-V514U	115 min.	130 min.
BN-V856U	7 hrs. 30 min.	8 hrs. 30 min.

INFORMATION:

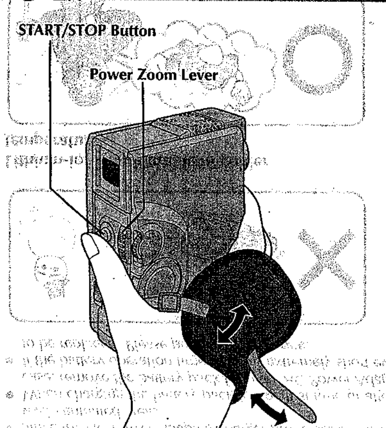
VU-V856KIT is a set composed of the BN-V856U battery pack and AA-V80EK AC Power Adapter/Charger. Also read thoroughly the VU-V856KIT's instruction manuals.
It is impossible to charge the BN-V856U battery pack using the provided AC Power Adapter/Charger. Use the optional AA-V80EK AC Power Adapter/Charger.

USING AC POWER

Use the AC Power Adapter/Charger (connect as shown in the illustration).

NOTES:

- *The provided AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.*
- *For other notes, ☞ pg. 8.*



Grip Adjustment

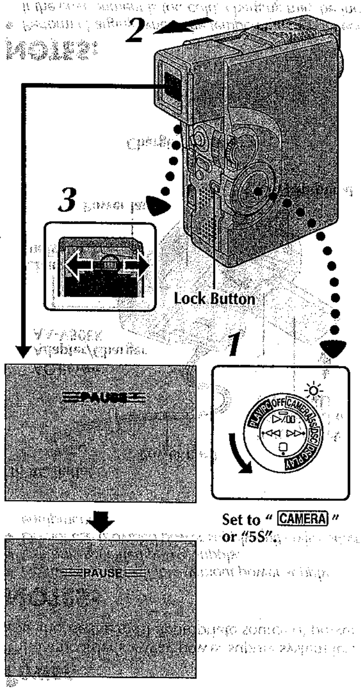
1 EXPAND LOOP
Separate the Velcro strip.

2 INSERT HAND
Pass your right hand through the loop and grasp the grip.

3 ADJUST STRAP LENGTH
Adjust so that your thumb and fingers can easily operate **START/STOP** and Power Zoom Lever. Refasten the Velcro strip.

NOTE:

When carrying the camcorder inside a bag, etc., the grip belt's metal buckle may damage the camcorder. It is recommended that you place it inside the Velcro strip.



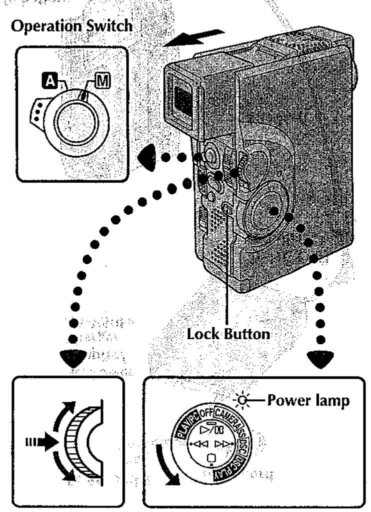
Viewfinder Adjustment

1 SELECT OPERATION MODE
Set the Power Switch to " CAMERA " or "5S" while pressing down the Lock Button.

2 POSITION VIEWFINDER
Pull out the viewfinder fully.

- The power lamp comes on and the camcorder is turned on.

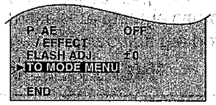
3 ADJUST DIOPTRE
Slide the Dioptre Adjustment Control until the indications in the viewfinder are clearly focused.



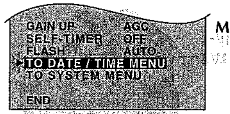
MENU/SET Dial

Power Switch

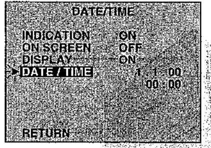
Display



Recording Menu



Mode Menu



Date/Time Menu

Date/Time Settings

Date and time will automatically be recorded on tape at all times. It is your choice to display it or not during playback (☞ pg. 55).

1 SELECT OPERATION MODE
Set the Operation Switch to " M ". Then, set the Power Switch to " CAMERA " or "5S" (or " DSC ") while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- The power lamp comes on and the camcorder is turned on.

2 ACCESS RECORDING MENU
Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU
Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it and the Mode Menu appears.

4 ACCESS DATE/TIME MENU
Move the highlight bar to "TO DATE/TIME MENU" by rotating **MENU/SET**. Press it and the Date/Time Menu appears.

5 INPUT DATE AND TIME
Move the highlight bar to "DATE/TIME" by rotating **MENU/SET**. Press it and "day" is highlighted and begins blinking.
Rotating **MENU/SET**, input the day. Press it. Repeat the procedure to input the month, year, hour and minute.

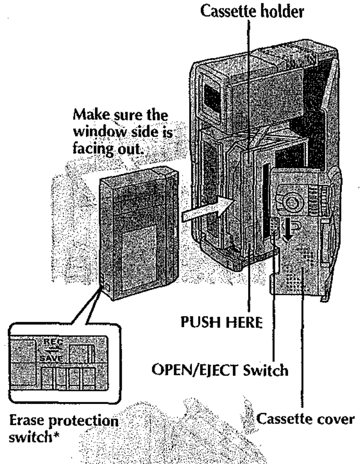
- Press **MENU/SET** twice when the highlight bar is set to "RETURN" to exit.

Regarding Built-in Clock's Rechargeable Lithium Battery

To store the date/time in memory, the clock's rechargeable lithium battery is integrated in the camcorder. While the camcorder is connected to an AC outlet using the AC Power Adapter/Charger, or while the battery pack attached to the camcorder continues to supply power to the camcorder, the clock's rechargeable lithium battery is always charged. However, if the camcorder is not used for approx. 3 months, the clock lithium battery will become discharged and the date/time stored in memory will be lost. When this occurs, first connect the camcorder to an AC outlet using the AC Power Adapter/Charger for over 24 hours to charge the clock's rechargeable lithium battery. Then perform the date/time setting before using the camcorder.
It is also possible to use the camcorder without the date/time setting.

NOTE:

*Even if you select "DATE/TIME", if the parameter is not highlighted the camcorder's internal clock continues to operate. Once you move the highlight bar to the first date/time parameter (day), the clock stops. When you finish setting the minute and press **MENU/SET**, the date and time begin operation from the date and time you just set.*



* ***To Protect Valuable Recordings . . .***

.... slide the erase protection switch on the back of the tape in the direction of "SAVE". This prevents this tape from being recorded over. If you decide later that you do want to record on this tape, slide the switch back to "REC" before loading the tape.

Loading/Unloading A Cassette

The camcorder needs to be powered up to load or eject a cassette.

1 OPEN CASSETTE COVER

Slide **OPEN/EJECT** in the direction of the arrow then swing the cover open until it locks. The holder opens automatically.

- Do not touch internal components.

2 INSERT/REMOVE TAPE

Insert or remove a tape and press "PUSH HERE" to close the cassette holder.

- Once the cassette holder is closed, it recedes automatically. Wait until it recedes completely before closing the cassette cover.
- When the battery's charge is low, you may not be able to close the cover. Do not apply force. Replace the battery with a fully charged one before continuing.

3 CLOSE CASSETTE COVER

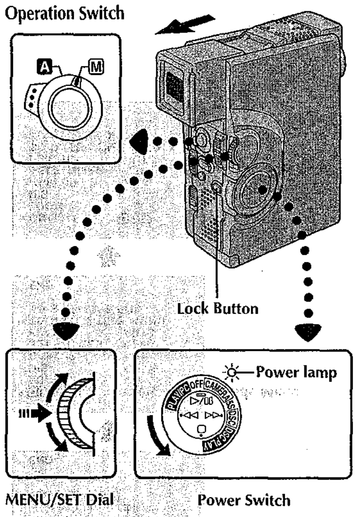
Close the cassette cover firmly until it locks into place.

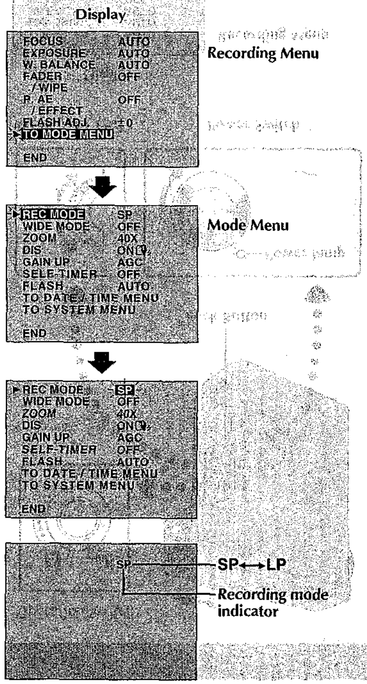
Approximate recording time

Tape	Recording mode	
	SP	LP
DVM-30	30 min.	45 min.
DVM-60	60 min.	90 min.

NOTES:

- *It takes a few seconds for the cassette holder to open. Do not apply force.*
- *If you wait a few seconds and the cassette holder does not open, close the cassette cover and try again. If the cassette holder still does not open, turn the camcorder off then on again.*
- *If the tape does not load properly, open the cassette cover fully and remove the cassette. A few minutes later, insert it again.*
- *When the camcorder is suddenly moved from a cold place to a warm environment, wait a short time before opening the cover.*
- *Closing the cassette cover before the cassette holder comes out may cause damage to the camcorder.*
- *Even when the camcorder is switched off, a cassette can be loaded or unloaded. After the cassette holder is closed with the camcorder switched off, however, it may not recede. It is recommended to turn the power on before loading or unloading.*
- *When resuming recording, once you open the cassette cover a blank portion will be recorded on the tape or a previously recorded scene will be erased (recorded over) regardless of whether the cassette holder came out or not. See page 25 for information about recording from the middle of a tape.*





```
FOCUS         AUTO
EXPOSURE      AUTO
W. BALANCE    AUTO
FADER         OFF
  / WIPE
P. AE         OFF
  / EFFECT
FLASH ADJ.    ±0
TO MODE MENU

END
```

```
REC MODE      SP
WIDE MODE     OFF
ZOOM          40X
DIS           ON
GAIN UP       AGC
SELF-TIMER    OFF
FLASH         AUTO
TO DATE / TIME MENU
TO SYSTEM MENU

END
```

```
REC MODE      SP
WIDE MODE     OFF
ZOOM          40X
DIS           ON
GAIN UP       AGC
SELF-TIMER    OFF
FLASH         AUTO
TO DATE / TIME MENU
TO SYSTEM MENU

END
```

```
SP
```

Recording Mode Setting

Set the tape recording mode according to your preference.

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA" or "5S" while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- The power lamp comes on and the camcorder is turned on.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU

Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it and the Mode Menu appears.

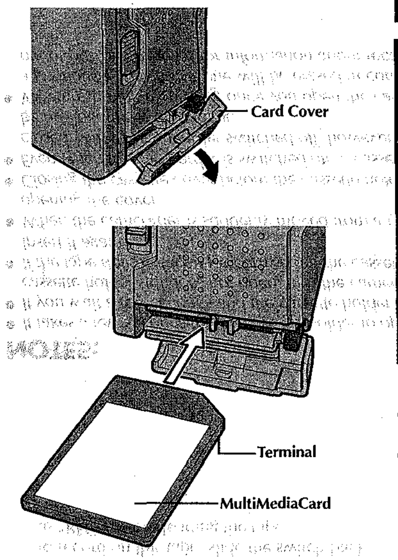
4 SET RECORDING MODE

First move the highlight bar to "REC MODE" by rotating **MENU/SET**. Press it and the parameter "SP" or "LP" is highlighted. Select "SP" or "LP" by rotating **MENU/SET**. Press it twice to exit from the Recording Menu.

- Audio Dubbing is impossible on a tape recorded in the LP mode.
- "LP" (Long Play) is more economical, providing 1.5 times the recording time.

NOTES:

- *If the recording mode is switched during recording, the playback picture will be blurred at the switching point.*
- *It is recommended that tapes recorded in the LP mode on this camcorder be played back on this camcorder.*
- *During playback of a tape recorded on another camcorder, blocks of noise may appear or there may be momentary pauses in the sound.*


Card Cover
Terminal
MultiMediaCard

Loading A MultiMediaCard

1 CONFIRM POWER-OFF STATUS

Make sure the camcorder's power is off.

2 OPEN THE CARD COVER

3 INSERT THE MULTIMEDIACARD

Insert the MultiMediaCard terminal end first with the label facing up (see the illustration on the left).

- Do not touch the terminal.

4 CLOSE THE CARD COVER

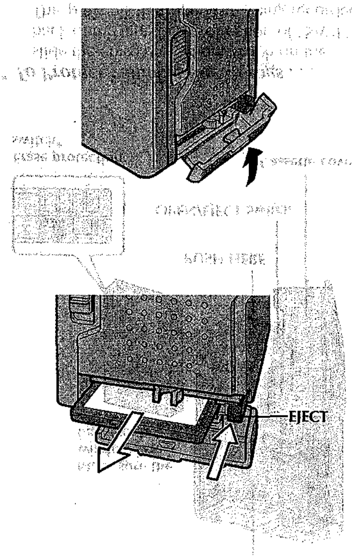
- If the card is not installed properly, the card cover cannot be closed.

NOTES:

- *Be sure to use only MultiMediaCards marked "**MultiMediaCard**".*
- *Some brands of MultiMediaCards are not compatible with this camcorder. Before purchasing a MultiMediaCard, consult its manufacturer or dealer.*

Unloading A MultiMediaCard

The MultiMediaCard retains images in its memory even after it has been removed from the camcorder.



1 CONFIRM POWER-OFF STATUS

Make sure the camcorder's power is off.

2 OPEN THE CARD COVER

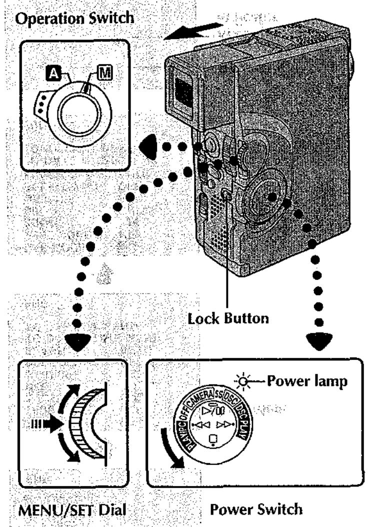
3 REMOVE THE MULTIMEDIACARD

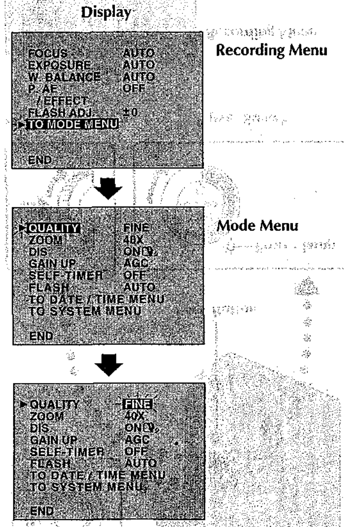
Press **EJECT**. The MultiMediaCard is disengaged from the camcorder.

4 CLOSE THE CARD COVER

ATTENTION:

Do not insert/remove the MultiMediaCard while the camcorder is turned on, as this may cause the MultiMediaCard to be corrupted or cause the camcorder to become unable to recognize whether or not the card is installed.


Operation Switch
A
M
Lock Button
Power lamp
OFF
CAMERA
5S
DSC
DSC PLAY
PLAY/PC
MENU/SET Dial
Power Switch


Display
FOCUS AUTO
EXPOSURE AUTO
W. BALANCE AUTO
P. AE / EFFECT OFF
FLASH ADJ. ±0
TO MODE MENU
END
Recording Menu
QUALITY FINE
ZOOM 40X
DIS ON
GAIN UP AGC
SELF-TIMER OFF
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END
Mode Menu
QUALITY FINE
ZOOM 40X
DIS ON
GAIN UP AGC
SELF-TIMER OFF
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END

Picture Quality Mode Setting

The Picture Quality mode can be selected to best match your needs. Three Picture Quality modes are available: FINE, STANDARD and ECONOMY (in order of quality).

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "DSC" while pressing down the Lock Button.
Open the LCD monitor fully or pull out the viewfinder fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU

Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it and the Mode Menu appears.

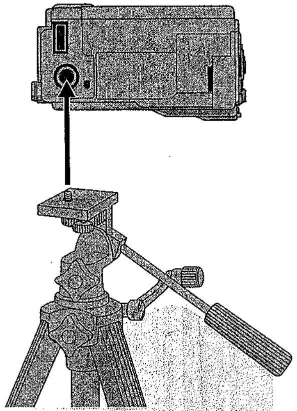
4 SET PICTURE QUALITY MODE

First, move the highlight bar to "QUALITY" by rotating **MENU/SET**. Press it and the parameter "FINE", "STANDARD" or "ECONOMY" is highlighted. Select "FINE", "STANDARD" or "ECONOMY" by rotating **MENU/SET**. Press it twice to exit the Recording Menu.

NOTE:

The number of storable images depends on the selected Picture Quality mode as well as the size of the images.

Picture Quality Mode	Number of Storable Images (with provided MultiMediaCard)
FINE	Approximately 30
STANDARD	Approximately 50
ECONOMY	Approximately 100



Tripod Mounting

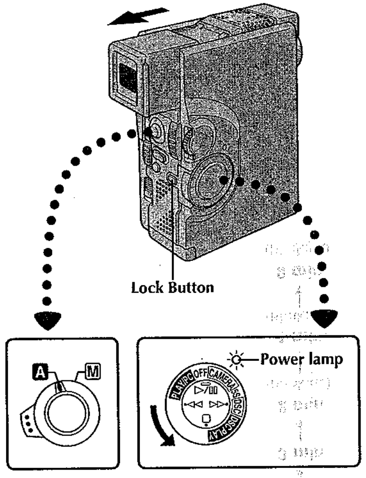
1 ALIGN AND TIGHTEN

Align the screw on the tripod with the camera's mounting socket. Then tighten the screw.

CAUTION:

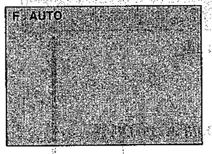
When using a tripod, be sure to open and extend its legs fully to stabilise the camcorder. To prevent damage to the unit caused by falling over, do not use a small-sized tripod.

To turn on the camcorder, first set the Power Switch to any operation mode except "OFF", then pull out the viewfinder fully or open the LCD monitor. When setting the Power Switch, press and hold the Lock Button.

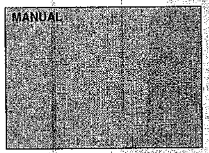


Operation Switch **Power Switch**

According to the Operation Switch position you have selected, "F.AUTO" or "MANUAL" appears in the upper left corner.



When set to "A"



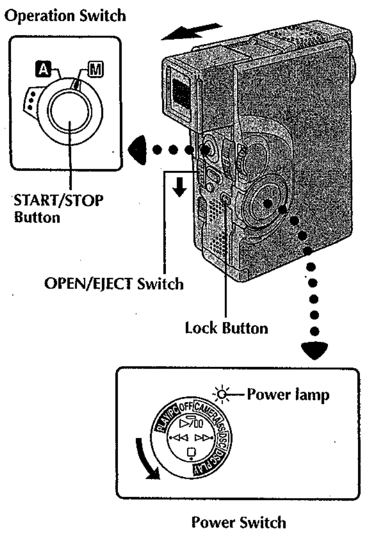
When set to "M" (When the Power Switch is set to "5S", "MANUAL" blinks.)

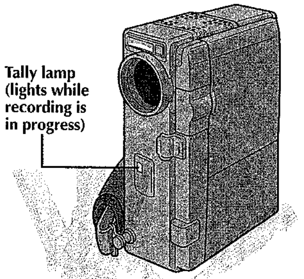
If the Power Switch is set to "PLAY/PC" or "DSC PLAY", these indications do not appear.

Operation Mode

Turning the Power Switch and Operation Switch allows you to choose the appropriate operation mode among the following table:

Power Switch/ Operation Switch Position		Function
Power Switch Position	CAMERA	Suitable for standard recording on a tape.
	5 second recording mode: **5S**	Allows you to record on a tape in 5-second clips to keep the action moving. Enables shooting in Manual mode. However, Focus and Exposure are the same as in the Full Auto mode, and it is not possible to change menu settings using the **MENU/SET** Dial.
	Digital Still Camera: DSC	Suitable for standard recording in the MultiMediaCard.
	PLAY/PC	Allows you to play back a recording on the tape or to transfer a still image recorded on the tape or in the MultiMediaCard to a computer.
	DSC PLAY	Allows you to display an image stored in the MultiMediaCard.
	OFF	Allows you to switch off the camcorder. After setting to this position, Manual Focus and Exposure Control are automatically reset to "AUTO".
Operation Switch Position	**Full Auto:** A	Allows you to record using NO special effects or manual adjustments. Suitable for standard recording.
	Manual: M	Allows you to set various recording functions using the Menus. If you want more creative capabilities than Full Auto recording, try this mode.





NOTE:

You should already have performed the procedures listed below. If not, do so before continuing.

- *Power (☞ pg. 8)*
- *Grip Adjustment (☞ pg. 10)*
- *Viewfinder Adjustment (☞ pg. 10)*
- *Recording Mode Setting (☞ pg. 13)*

1 LOAD A CASSETTE

Slide **OPEN/EJECT** in the direction of the arrow then swing the cover open until it locks. The holder opens automatically.

Insert a tape and press "PUSH HERE" to close the cassette holder.

- Once the cassette holder is closed, it recedes automatically. Wait until it recedes completely before closing the cassette cover.

Shooting While Watching The Viewfinder

2 ENTER RECORD-STANDBY MODE

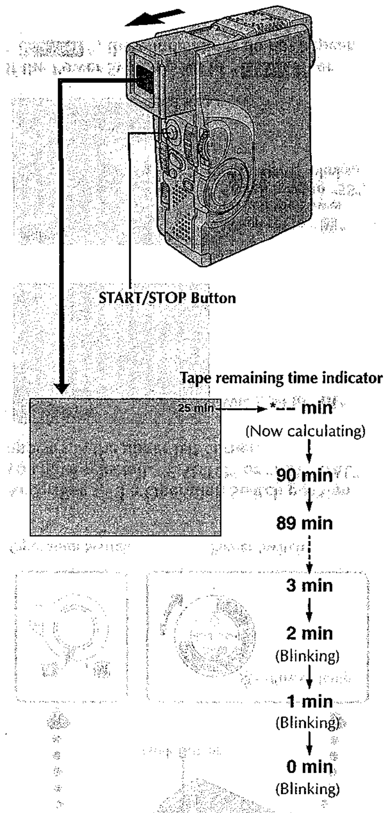
Make sure the LCD monitor is closed and locked. Set the Operation Switch to "A" or "M". Then, set the Power Switch to "CAMERA" while pressing down the Lock Button. Pull out the viewfinder fully.

- The lens cover opens, the power lamp lights and the camcorder enters the Record-Standby mode.
- The scene you are aimed at appears on the viewfinder screen, with the word "PAUSE" superimposed upon it.

3 START SHOOTING

Press **START/STOP**.

- "REC" appears in the viewfinder while recording is in progress.



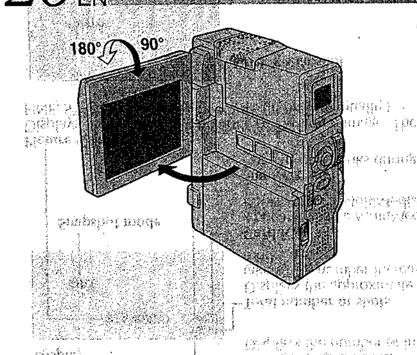
4 STOP RECORDING

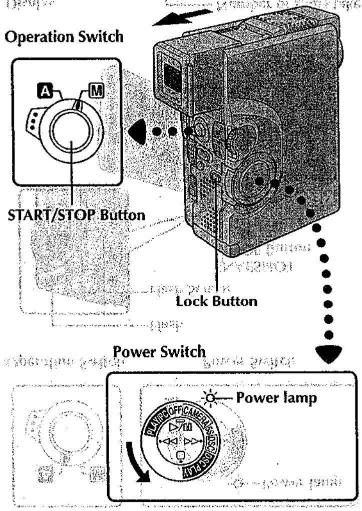
Press **START/STOP** again to stop recording.

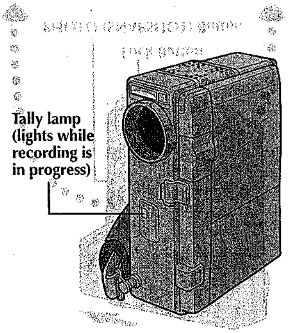
- The camcorder re-enters the Record-Standby mode.

NOTES:

- *The image will not appear simultaneously in the LCD monitor and the viewfinder. No image appears on the LCD monitor when the viewfinder is pulled out. It is not possible to shoot using both LCD monitor and viewfinder. However, during Interface Shooting (☞ pg. 21) the image appears simultaneously in the LCD monitor and the viewfinder.*
- *The cassette holder cannot be opened unless a power supply is attached.*
- *There may be a delay after you open the cassette cover until the holder opens. Do not use force.*
- *The indicated tape remaining time is approximate.*
- *The time required to calculate and to display the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette whose tape is already at its end is loaded.*
- *If the Record-Standby mode continues for 5 minutes, the camcorder's power shuts off automatically. To turn the camcorder on again, push back and pull out the viewfinder again or close and re-open the LCD monitor.*
- *When a blank portion is left between recorded scenes on the tape, the time code is interrupted and errors may occur when editing the tape. Continue recording from where you stop so that there are no gaps by following "Recording from the middle of a tape" (☞ pg. 25).*
- *During recording, sound is not heard from the speaker. If you want to hear the sound, connect optional headphones to the headphones connector. The sound volume at this point is the same as the level it was adjusted during playback.*
- *To turn the tally lamp off during recording, refer to pgs. 34 – 39.*







Shooting While Watching The LCD Monitor

Before the following steps, perform step **1** (☞ pg. 18).

2 ENTER RECORD–STANDBY MODE

Make sure the viewfinder is pushed back in. Set the Operation Switch to " A " or " M ". Then, set the Power Switch to " CAMERA " while pressing down the Lock Button.
Open the LCD monitor fully.

- The lens cover opens, the power lamp lights and the camcorder enters the Record-Standby mode.
- The scene you are aimed at appears in the LCD monitor, with the word "PAUSE" superimposed upon it.

3 START SHOOTING

Tilt the LCD monitor upward/downward for best viewability (☞ pg. 21) and press **START/STOP**.

- " REC ▶▶ " appears in the LCD monitor while recording is in progress.

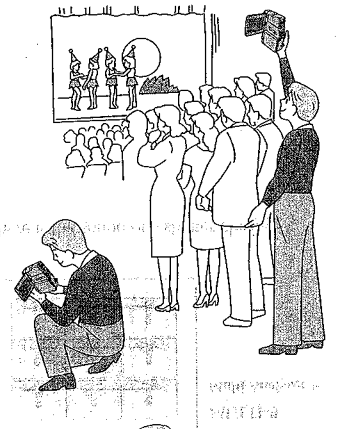
4 STOP RECORDING

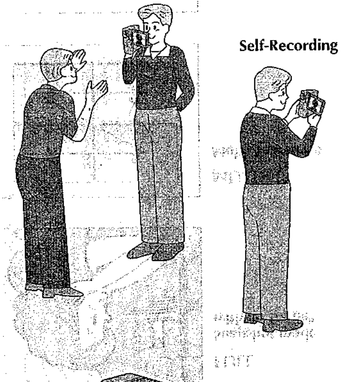
Press **START/STOP** again to stop recording.

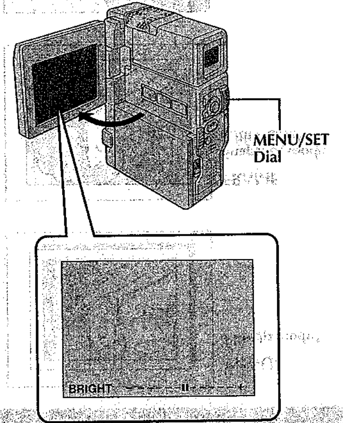
- The camcorder re-enters the Record-Standby mode.

NOTES:

- *When you use the LCD monitor outdoors in direct sunlight, the LCD monitor may be difficult to see. If this happens, we recommend that you use the viewfinder (☞ pg. 18).*
- *To turn the tally lamp off during recording, refer to pgs. 34 – 39.*
- *For other notes, refer to pg. 19.*







Journalistic Shooting

In some situations different angles of shooting may be required for more dramatic results.

1 OPEN LCD MONITOR

Make sure the LCD monitor is fully open.

2 TILT LCD MONITOR

Tilt the LCD monitor in the most convenient direction.

- The LCD monitor can rotate almost full circle (270°: 90° downward, 180° upward).

Interface Shooting

A person you shoot can view himself/herself in the LCD monitor, and you can even shoot yourself while viewing your own image in the LCD monitor.

1 TILT LCD MONITOR UPWARD

Open the LCD monitor and tilt it upward to 180 degrees so that it faces forward.

- The monitor image is inverted vertically. If the viewfinder is pulled out at that time, it will also switch on.

2 START RECORDING

Point the lens toward the subject (yourself when self-recording) and start recording.

- During Interface Shooting, the "Tape Running" indicator and warning indications (☞ pg. 102 – 105) are the only ones that are shown; they appear reversed in the display as they would when viewing a mirror, but are not reversed in the recording.

NOTE:

The tape remaining indicator does not appear during interface shooting. However, when the remaining time reaches 2 minutes, the indicator appears showing the remaining time: → -- - ▭ (blinking) → -- ▭ (blinking) → - ▭ (blinking)

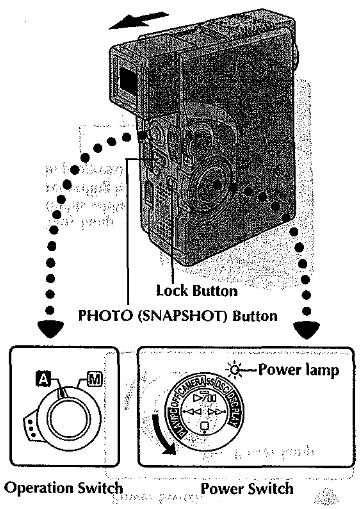
Brightness Control

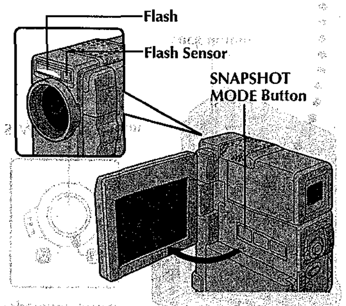
You can adjust the brightness of the display by rotating **MENU/SET**.

1 ADJUST BRIGHTNESS

Rotate **MENU/SET** until the brightness indicator moves and the display reaches its appropriate brightness.

- The brightness indication appears on the display.
- If the viewfinder is pulled out, it is also possible to adjust its brightness.





Basic Shooting (Snapshot)

You can use your camcorder as a Digital Still Camera (D.S.C.) for taking snapshots. Still images shot in the D.S.C. mode (when the Power Switch is set to "DSC") are recorded in the MultiMediaCard.

NOTE:

You should already have performed the procedures listed below. If you haven't, do so before continuing.

- *Power (☞ pg. 8)*
- *Grip Adjustment (☞ pg. 10)*
- *Viewfinder Adjustment (☞ pg. 10)*
- *Loading A MultiMediaCard (☞ pg. 14)*
- *Picture Quality Mode Setting (☞ pg. 15)*

SNAPSHOT MODE SELECTION

1 SELECT OPERATION MODE

Set the Operation Switch to "A" or "M". Then, set the Power Switch to "DSC" while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

2 SELECT SNAPSHOT MODE

Choose the appropriate mode from among the 5 snapshot modes available (☞ pg. 23) by pressing **SNAPSHOT MODE**.

Press **SNAPSHOT MODE** as many times as necessary until the desired snapshot mode indicator is displayed.

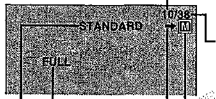
SNAPSHOT RECORDING

1 TAKE SNAPSHOT

Press **PHOTO (SNAPSHOT)**. The image is recorded in the MultiMediaCard.

- When the "ϟ" flash ready indicator is displayed, the flash fires.

Display



Number of shots taken
Displays the number of images that have already been shot.

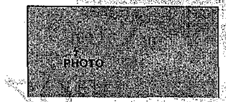
Total number of shots
Displays the approximate total number of shots that can be stored, including those already taken. The number increases or decreases depending on the shots stored, the Picture Quality mode, etc.

Card icon
Appears when a MultiMediaCard is loaded.
Blinks when a MultiMediaCard is not loaded.

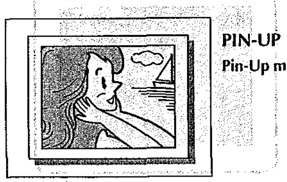
Shooting icon
Appears and blinks during shooting.

Snapshot mode

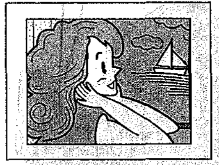
Picture Quality mode
Displays the Picture Quality mode of the stored image. There are 3 modes available: FINE, STANDARD and ECONOMY (in order of quality).



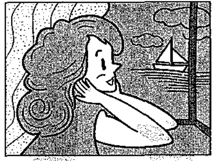
During snapshot



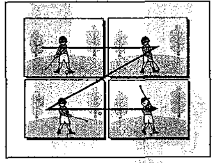
PIN-UP
Pin-Up mode*



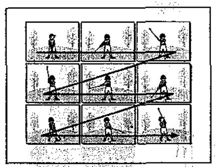
FRAME
Snapshot mode with frame*



FULL
Snapshot mode with no frame*



MULTI-4
Multi-Analyser 4



MULTI-9
Multi-Analyser 9

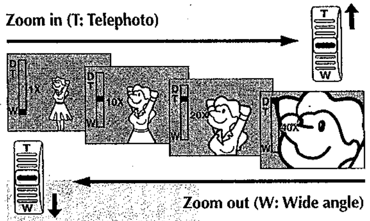
*:There is the sound of a shutter closing.

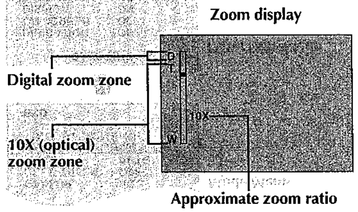
To Record An Image With A Title/Frame . . .
. . . refer to "Superimposing A Title/Frame" (☞ pg. 69).

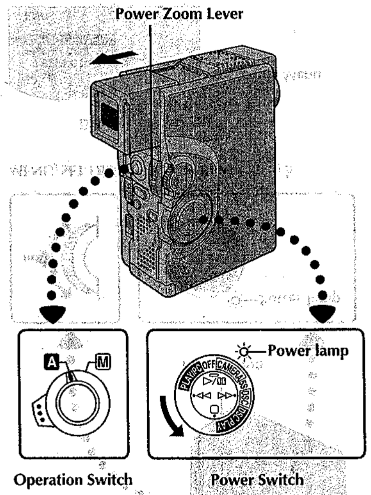
To Remove The Shutter Sound . . .
. . . when you don't want to hear the shutter sound, set BEEP/TALLY to "OFF" in the System Menu (☞ pg. 34 – 39). The sound is no longer hard from the speaker.

NOTES:

- *Even if "MULTI-4" or "MULTI-9" is engaged, Snapshot recording will be performed in the FULL mode during Digital Zoom. However, the flash will not fire.*
- *If Snapshot recording is not possible, "PHOTO" blinks when **PHOTO (SNAPSHOT)** is pressed.*
- *Even if Programme AE with special effects (☞ pg. 44, 45) is engaged, certain modes of Programme AE with special effects are disabled during Snapshot recording. In such a case, the icon blinks.*
- *If shooting is not performed for approx. 5 minutes when the Power Switch is set to "DSC" and power is supplied from the battery pack, the camcorder shuts off automatically to save power. To perform shooting again, close the LCD monitor and re-open it. When using the viewfinder, push back it in and pull it out again.*
- *Motor Drive Mode (☞ pg. 30) is disabled when the Power Switch is set to "DSC".*
- *To reduce the Red-Eye effect of the subject's eyes when the flash fires, ☞ pg. 32.*
- *When a cable or headphone set is connected to the AV OUT connector, the shutter sound is not heard from the speaker.*


Zoom in (T: Telephoto)
T
W
1X
10X
20X
40X
Zoom out (W: Wide angle)


Zoom display
Digital zoom zone
10X (optical) zoom zone
10X
Approximate zoom ratio


Power Zoom Lever
A
M
Power lamp
Operation Switch
Power Switch

FEATURE: Zooming

PURPOSE:

To produce the zoom in/out effect, or an instantaneous change in image magnification.

OPERATION:

Zoom In
Slide the Power Zoom Lever towards "T".

Zoom Out
Slide the Power Zoom Lever towards "W".

■ The further you slide the Power Zoom Lever, the quicker the zoom action.

NOTES:

- *Focusing may become unstable during Zooming. In this case, set the zoom while in Record-Standby, lock the focus by using the manual focus (☞ pg. 47), then zoom in or out in Record mode.*
- *In Full Auto mode (when the Operation Switch is set to "A"), zoom magnification of up to 40X is possible. In Manual mode (when the Operation Switch is set to "M"), zooming is possible to a maximum of 100X or can be switched to 10X magnification offered by optical zoom.*
- *Zoom magnification of over 10X is done through Digital image processing, and is therefore called Digital Zoom.*
- *During Digital zoom, the quality of image may suffer.*
- *Digital zoom cannot be used while functions done through Digital image processing (Picture Wipe/Dissolve function, ☞ pg. 42, Video Echo, ☞ pg. 45, etc.) are activated.*
- *Macro shooting (as close as approx. 5 cm to the subject) is possible when the Power Zoom Lever is set all the way to "W". Also see "TELE MACRO" in the System Menu on page 39.*

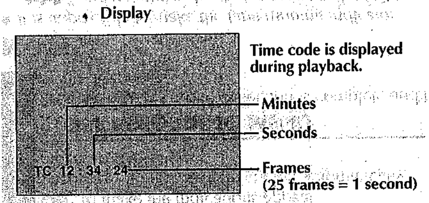
NOTE: Recording From The Middle Of A Tape

Time Code

During recording, a time code is recorded on the tape. This code is to confirm the location of the recorded scene on the tape during playback.
If recording starts from a blank portion, the time code begins counting from "00:00:00" (minute:second:frame). If recording starts from the end of a previously recorded scene, the time code continues from the last time code number.

To perform Random Assemble Editing (☞ pg. 84 – 89), time code is necessary. If during recording a blank portion is recorded partway through the tape, the time code is interrupted. When recording is resumed, the time code starts counting up again from "00:00:00". This means the camcorder may record the same time codes as those existing in a previously recorded scene. To prevent leaving a blank portion on a tape, perform the procedure in "Recording From The Middle of A Tape" (see below) in the following cases;

- After playing back the recorded tape, when you shoot again.
- When power shuts off during shooting.
- When a tape is removed and re-inserted during shooting.
- When shooting using a partially recorded tape.
- When shooting on a blank portion located partway through the tape.
- When shooting again after already shooting a scene and opening/closing the cassette cover.


Display
Time code is displayed during playback.
Minutes
Seconds
Frames
(25 frames = 1 second)
TC 12 : 34 : 24

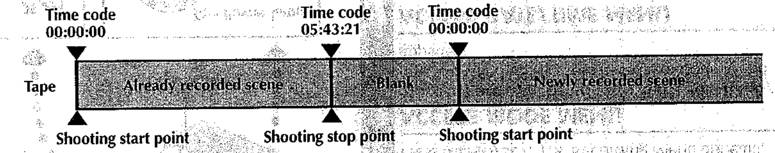
Recording From The Middle Of A Tape

1. Play back a tape to find the spot at which you want to start recording, then engage the Still Playback mode (☞ pg. 53).
2. Set the Operation Switch to "A" or "M". Then, set the Power Switch to "CAMERA" or "5S" while pressing down the Lock Button and start recording.

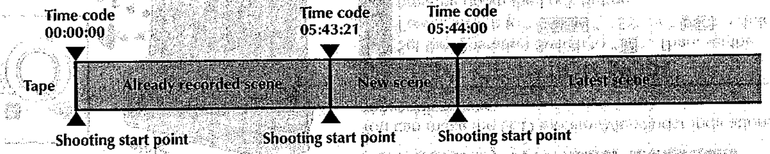
NOTES:

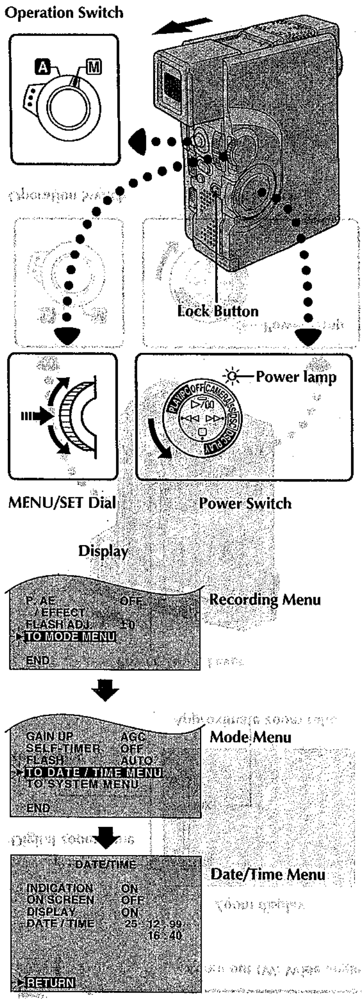
- *The Time Code cannot be reset.*
- *During fast-forwarding and rewinding, time code indication does not move smoothly.*

When blank portion is recorded on a tape


Time code
00:00:00
Time code
05:43:21
Time code
00:00:00
Tape
Already recorded scene
Blank
Newly recorded scene
Shooting start point
Shooting stop point
Shooting start point

Proper recording


Time code
00:00:00
Time code
05:43:21
Time code
05:44:00
Tape
Already recorded scene
New scene
Latest scene
Shooting start point
Shooting start point
Shooting start point


Operation Switch
A
M
Lock Button
Power lamp
MENU/SET Dial
Power Switch
Display
P. AE / EFFECT OFF
FLASH ADJ. ±0
TO MODE MENU
END
Recording Menu
GAIN UP AGC
SELF-TIMER OFF
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END
Mode Menu
DATE/TIME
INDICATION ON
ON SCREEN OFF
DISPLAY ON
DATE / TIME 25 . 12 . 99 16 : 40
RETURN
Date/Time Menu

Displaying The Date And Time During Recording

When the Operation Switch is set to "M", you can choose whether to display the date and time during recording or not. You must first set the date and time ("Date/Time Settings", ☞ pg. 11). Set "DISPLAY" to "ON" in the Date/Time Menu. The Date/Time is always displayed when the Operaton Switch is set to "A".

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU

Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it and the Mode Menu appears.

4 ACCESS DATE/TIME MENU

Move the highlight bar to "TO DATE/TIME MENU" by rotating **MENU/SET**. Press it and the Date/Time Menu appears.

5 SELECT FUNCTION

Move the highlight bar to "DISPLAY" by rotating **MENU/SET**, then press it.

6 SET FUNCTION PARAMETERS

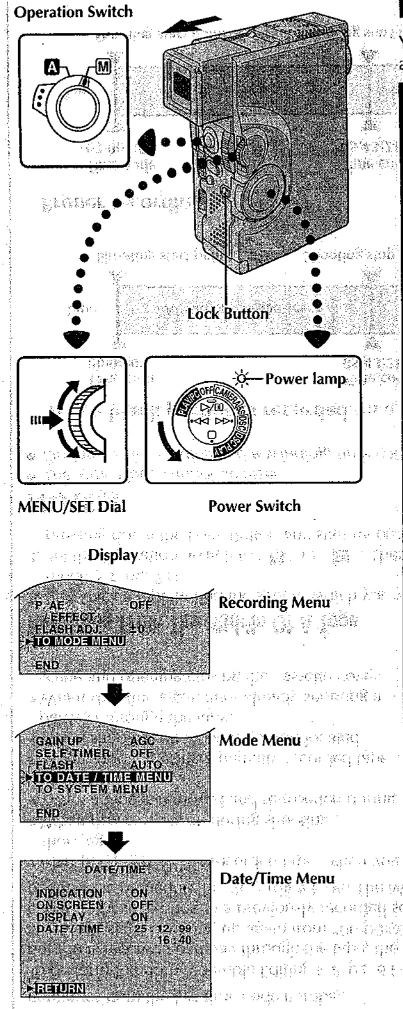
Cycle through the available settings of the selected functions by rotating **MENU/SET** and stop when the one you want is displayed. Then press it and the highlight bar automatically moves to "RETURN".

7 CLOSE RECORDING MENU

Press **MENU/SET** twice. Selection is complete and the menu disappears.

NOTES:

- *Connect the camcorder to a TV and set "ON SCREEN" to "ON" in the Date/Time Menu. The display appears on the connected TV.*
- *Even if "ON SCREEN" is set to "ON", the indications are removed from the TV if "INDICATION" is set to "OFF" (☞ pg. 27).*


Operation Switch
A
M
Lock Button
Power lamp
MENU/SET Dial
Power Switch
Display
P. AE / EFFECT OFF
FLASH ADJ. ±0
TO MODE MENU
END
Recording Menu
GAIN UP AGC
SELF-TIMER OFF
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END
Mode Menu
DATE/TIME
INDICATION ON
ON SCREEN OFF
DISPLAY ON
DATE / TIME 25 . 12 . 99 16 : 40
RETURN
Date/Time Menu

LCD Monitor/Viewfinder Indications

You can make the LCD monitor/Viewfinder indications appear/disappear.

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU

Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it and the Mode Menu appears.

4 ACCESS DATE/TIME MENU

Move the highlight bar to "TO DATE/TIME MENU" by rotating **MENU/SET**. Press it and the Date/Time Menu appears.

5 SELECT FUNCTION

Move the highlight bar to "INDICATION" by rotating **MENU/SET**, then press it.

6 SET FUNCTION PARAMETERS

Cycle through the available settings of the selected functions by rotating **MENU/SET** and stop when the one you want is displayed.

OFF: To make the indications disappear.

ON: To make the indications appear.

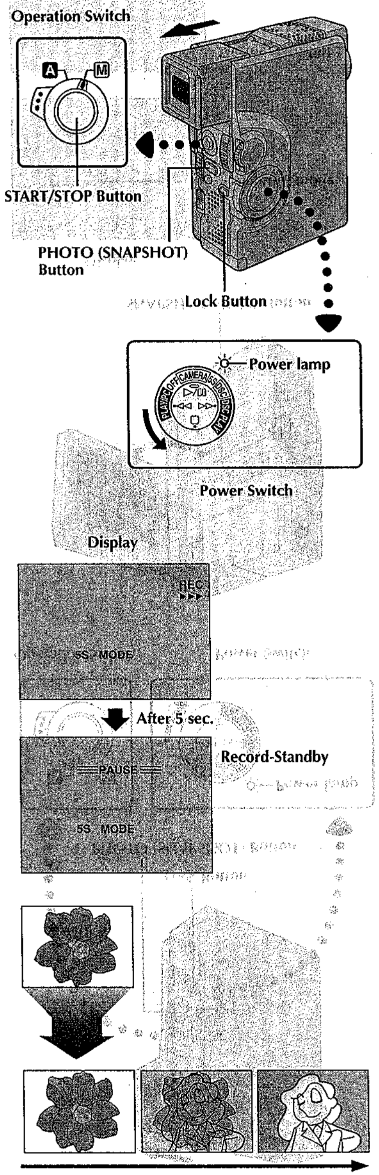
Then press it and the highlight bar automatically moves to "RETURN".

7 CLOSE RECORDING MENU

Press **MENU/SET** twice. Selection is complete and the menu disappears.

NOTES:

- *It is impossible to make the tape running indicator "▶▶▶" and warnings etc. disappear from the LCD monitor or the viewfinder. For the indications that can be removed, ☞ pg. 102, 103.*
- *If "INDICATION" is set in the Date/Time Menu, "INDICATION" in the Playback Menu will also be set to the same setting (☞ pg. 55).*


Operation Switch
START/STOP Button
PHOTO (SNAPSHOT) Button
Lock Button
Power lamp
Power Switch
Display
REC
5S MODE
After 5 sec.
PAUSE
5S MODE
Record-Standby

Dissolves during 5 second recording mode

Scene (5-second recording)

Record a vacation or an important event in 5-second clips to keep the action moving. This function is available only for video recording.

1 SELECT OPERATION MODE

Set the Operation Switch to "🅰" or "Ⓜ", then set the Power Switch to "5S" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

- "5S MODE" appears.

2 ENGAGE 5S MODE

Press **START/STOP**. The tally lamp lights and beep sounds to indicate the start of recording, and after 5 seconds the camcorder enters Record-Standby mode.

- If you press **START/STOP** again within 5 seconds after recording starts, Record-Standby mode is not engaged.
- If you press and hold **START/STOP**, recording continues until **START/STOP** is released.

3 END 5S MODE

Set the Power Switch to "CAMERA" or "OFF".

To Take A Snapshot In The 5-Second Recording Mode . . .

. . . instead of pressing **START/STOP** in step **2**, press **SNAPSHOT MODE** as many times as necessary until the desired snapshot indicator is displayed, then press **PHOTO (SNAPSHOT)**. The camcorder records a 5-second still (☞ pg. 30). When "SCENE" is set to "ANIM." (☞ pg. 34 – 39) this function is not available.

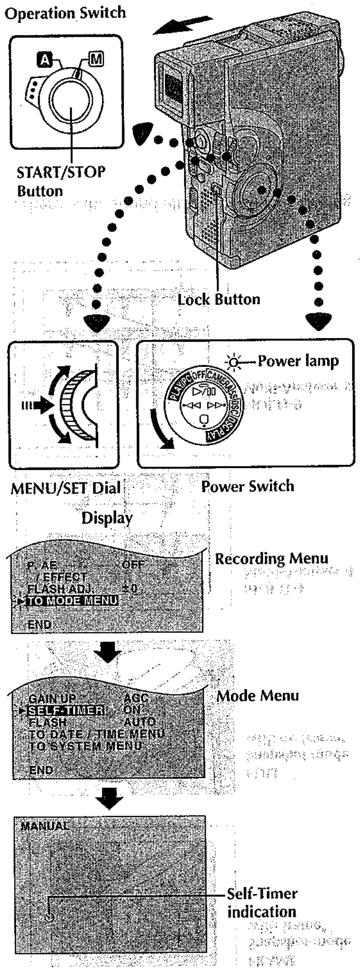
NOTES:

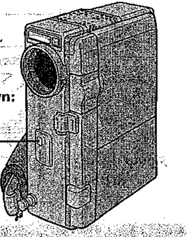
- *When "SCENE" is set to "ANIM." in the System Menu, the 5-second recording mode is not available. Animation recording of a 1/3-second clip is taken instead (☞ pg. 34 – 39).*
- *While the 5-second recording mode is activated, Fade/Wipe effects (☞ pg. 43) and Programme AE with special effects (☞ pg. 45) cannot be performed. However, when "SCENE" is set to "5SD" in the System Menu (☞ pg. 39), the Dissolve function is available (see below).*

Dissolves during 5 second recording mode

Set "SCENE" to "5SD" in the System Menu (☞ pg. 34 – 39). "5SD MODE" appears in step **1**. Record one 5-second clip, and the image at the end of the clip is stored. If you record the next clip within 5 minutes, the previous scene dissolves as the new scene appears.

- If you turn the power off, the stored image will be lost.


Operation Switch
START/STOP Button
Lock Button
Power lamp
MENU/SET Dial
Power Switch
Display
Recording Menu
P. AE OFF
EFFECT
FLASH ADJ. ±0
TO MODE MENU
END
Mode Menu
GAIN UP AGC
SELF-TIMER ON
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END
MANUAL
Self-Timer indication



When START/STOP or PHOTO (SNAPSHOT) is pressed, the tally lamp changes as shown:

Self-Timer

Once the camcorder is set, the camcorder operator can become part of the scene in a more natural way, adding the final touch to a memorable picture.

1 SELECT OPERATION MODE

Set the Operation Switch to "Ⓜ". Then, set the Power Switch to "CAMERA" or "DSC" (or "5S") while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

- You can tilt the LCD monitor upward to 180 degrees so that it faces forward and view yourself while self-recording with the viewfinder pushed back.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU

Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it. The Mode Menu appears.

4 SET SELF-TIMER

Move the highlight bar to "SELF-TIMER" by rotating **MENU/SET**. Press it and the parameter is highlighted. Rotate **MENU/SET** until "ON" appears. Press it twice to exit from the Recording Menu.

5 ENGAGE SELF-TIMER MODE

Press **START/STOP**. After 15 seconds, the beep sounds and video recording starts. To stop Self-Timer recording, press **START/STOP** again. The camcorder re-enters Record-Standby mode.

OR

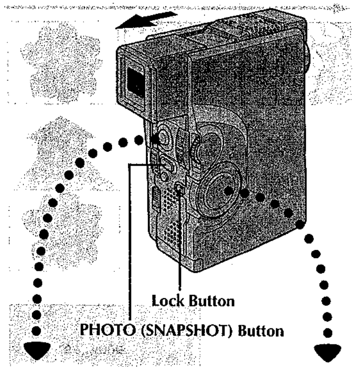
Press **PHOTO (SNAPSHOT)**. After 15 seconds, the beep sounds and snapshot recording starts. After that, the camcorder re-enters Record-Standby mode.

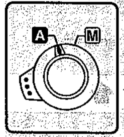
6 END SELF-TIMER RECORDING

Set the Operation Switch to "🅰" or set the Power Switch to "OFF". "SELF-TIMER" is automatically set back to "OFF".

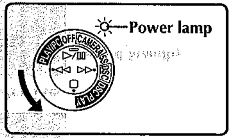
Begins blinking (Self-Timer starts) → **Blinks quickly (Self-Timer shooting starts soon)** → **Stops blinking and stays on (Self-Timer shooting starts)**

After approx. 15 sec.

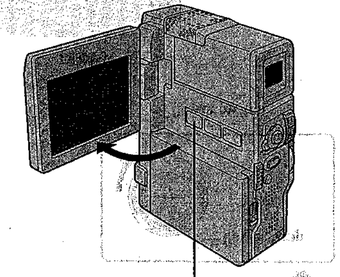




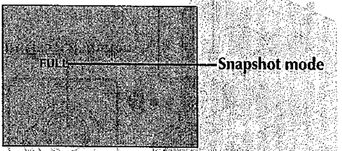
Operation Switch

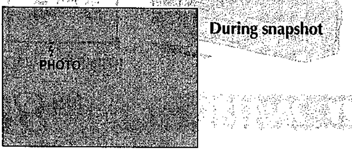


Power Switch



Display





Snapshot (For Video Recording)

Use your camcorder like a regular camera and take a snapshot, or several of them in succession.
This feature lets you record still images that look like photographs onto a tape.

SNAPSHOT MODE SELECTION

1 SELECT OPERATION MODE

Set the Operation Switch to "A" or "M". Then, set the Power Switch to "CAMERA" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 SELECT SNAPSHOT MODE

Choose the appropriate mode from among the 5 Snapshot modes (☞ pg. 31) by pressing **SNAPSHOT MODE**.
Press **SNAPSHOT MODE** as many times as necessary until the desired snapshot mode indicator is displayed.

SNAPSHOT RECORDING

1 TAKE SNAPSHOT

Press **PHOTO (SNAPSHOT)**.

If you press during Record-Standby . . .
.... "PHOTO" appears and a still image will be recorded for approx. 6 seconds, then the camcorder re-enters the Record-Standby mode.

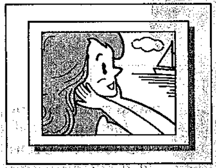
If you press during Recording . . .
.... "PHOTO" appears and a still image will be recorded for approx. 5 seconds, then the normal recording resumes.

- When the "ϟ" flash ready indicator is displayed, the flash fires.

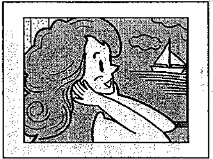
Motor Drive Mode

Keeping **PHOTO (SNAPSHOT)** pressed provides an effect similar to serial photography. (The interval between the still images: approx. 1 second.) However, when "REC SELECT" is set to "TAPE & CARD" in the System Menu (☞ pg. 39), the Motor Drive Mode does not take place.

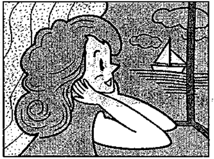
To Remove The Shutter Sound. . .
.... when you don't want to hear the shutter sound, set BEEP/TALLY to "OFF" in the System Menu (☞ pg. 34 – 39). Though the sound is not heard from the speaker, it is recorded on the tape.



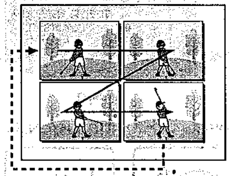
PIN-UP
Pin-Up mode*



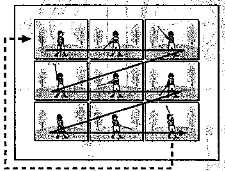
FRAME
Snapshot mode with frame*



FULL
Snapshot mode with no frame*



MULTI-4
Multi-Analyser 4

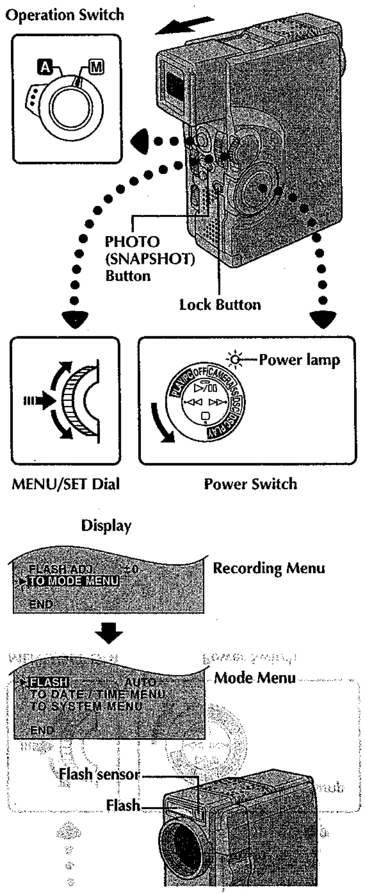


MULTI-9
Multi-Analyser 9

*:There is the sound effect of a shutter closing.

NOTES:

- *Even if "MULTI-4" or "MULTI-9" is engaged, Snapshot recording will be performed in the FULL mode during Digital Zoom. However, the flash will not fire.*
- *If Snapshot recording is not possible, "PHOTO" blinks when **PHOTO (SNAPSHOT)** is pressed.*
- *Even if Programme AE with special effects (☞ pg. 44) is* engaged, certain modes of Programme AE with special *effects are disabled during Snapshot recording. In such a case, the icon blinks.*
- *When "REC SELECT" is set to "TAPE & CARD" in the System Menu (☞ pg. 39), still images are recorded not only onto the tape but also in the MultiMediaCard. If a tape is not loaded, they are recorded only in the MultiMediaCard, and if a MultiMediaCard is not loaded, the message "COPYING FAILED" appears and still images are recorded only onto the tape.*
- *If **PHOTO (SNAPSHOT)** is pressed during tape playback . . . .*
  - *If a MultiMediaCard is not loaded: The message "COPYING FAILED" will appear, and a still image produced by the Snapshot mode will be displayed, in the same manner as during recording.*
  - *If a MultiMediaCard is loaded: A still image produced by the Snapshot mode will be recorded in the MultiMediaCard (☞ pg. 77).*
- *To reduce the Red-Eye effect of the subject's eyes when the flash fires, ☞ pg. 32.*
- *When a cable or headphone set is connected to the AV OUT connector, the shutter sound is not heard from the speaker, however it is recorded onto the tape.*



Snapshot Flash (Auto Flash)

In Full Auto or Manual mode, when "FLASH" is set to "AUTO" or "AUTO 👁" in the Mode Menu, the flash automatically fires if it's dark (ϟ appears) when a snapshot is taken in Record-Standby.
By setting "FLASH" to "ON" or "OFF" in the Mode Menu, the flash can be activated or deactivated on demand.
To reduce the Red-Eye effect in the subject's eyes, it is recommended that you set "FLASH" to "AUTO 👁". The flash automatically fires using this function when it is dark.

1 ENGAGE RECORD-STANDBY

Set the Operation Switch to "A" or "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

If the Operation Switch is set to "A" . . .
.... go to step **6**.
If the Operation Switch is set to "M" . . .
.... go to step **2**.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS MODE MENU

Move the highlight bar to "TO MODE MENU" by rotating **MENU/SET**. Press it. The Mode Menu appears.

4 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "FLASH", then press it.

5 SELECT FUNCTION PARAMETERS

Rotate **MENU/SET** to display the desired parameter ("AUTO", "ON", "OFF" or "AUTO 👁") and press it. The parameter stops blinking and setting is complete. Press **MENU/SET**. The normal screen reappears.

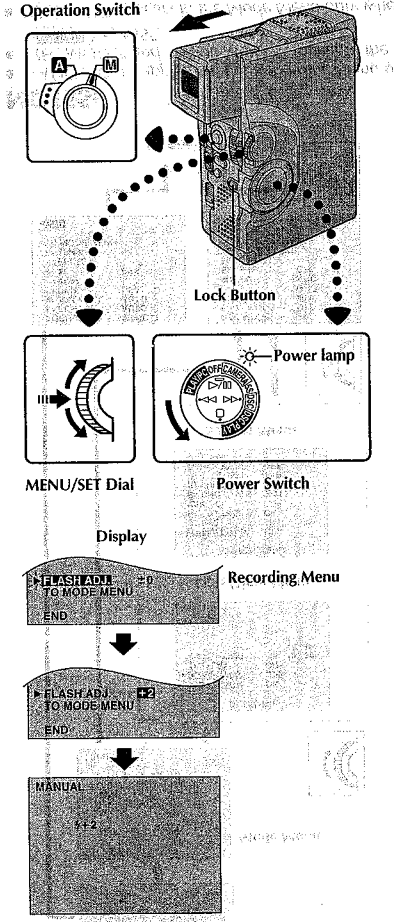
6 TAKE SNAPSHOT

Press **PHOTO (SNAPSHOT)**.

If "AUTO 👁" Is Selected In The Mode Menu . . .
... the 👁 Red-Eye reduction indicator lights, then press **PHOTO (SNAPSHOT)**. The flash fires twice. The first flash is for reduction of the human eye's red reflection and the second flash is for the actual recording.

NOTES:

- *Do not fire the flash at a person at short range.*
- *In Multi-Analyser 4 or Multi-Analyser 9, the flash is disabled (☞ pg. 23, 31).*
- *The flash does not fire when the flash is set to "OFF" on the Mode Menu and also when the battery remaining power is low. Moreover, the flash does not fire when it is set to "AUTO" on the Mode Menu with GAIN UP set to "OFF" (☞ pg. 37) and with Programme AE with special effects set to "TWILIGHT" (☞ pg. 45).*
- *When taking several snapshots in succession (Motor Drive Mode), the flash fires only during the first one.*
- *Although images shot with a flash tend to look whiter than they actually are, to compensate for this the camcorder automatically darkens the picture when using the flash. When shooting a subject at a distance where the flash light cannot reach (over approx. 2 m), set the flash to "OFF" to prevent the picture from becoming too dark.*
- *The colour tone changes depending on the background lighting conditions, such as under fluorescent or halogen lamps.*
- *When you want to change the brightness of the flash, refer to "Flash Brightness Adjustment" (☞ pg. 33).*
- *While charging the flash, ϟ blinks and the flash will not fire. Although noise may appear, this is not a malfunction and is not recorded. It can take up to ten seconds to charge the flash.*



Flash Brightness Adjustment

When a snapshot (☞ pg. 22, 30) is taken in the dark the camcorder fires the flash (☞ pg. 32) and adjusts the brightness automatically. You can also adjust the flash brightness manually. When you find that the snapshots you took look too bright or too dark, adjust it manually.

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "FLASH ADJ.", then press it. The parameter blinks.

4 ADJUST BRIGHTNESS OF FLASH

Rotating **MENU/SET** upward increases the number of the brightness adjustment and rotating **MENU/SET** downward decreases it.

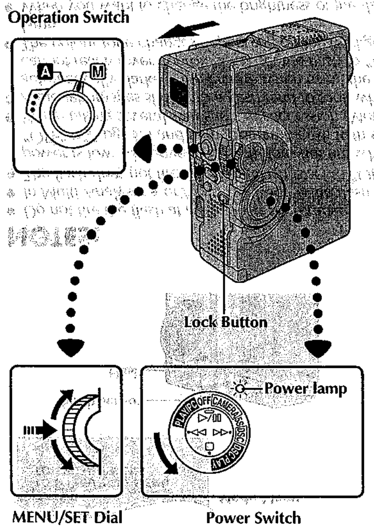
- The adjustment range is from –3 to +3.

5 ACTIVATE BRIGHTNESS OF FLASH

Press **MENU/SET** twice. The flash brightness adjustment is complete and the normal screen reappears.

NOTES:

- *When the battery power is low or when "FLASH" is set to "OFF" in the Mode Menu, the "FLASH ADJ." setting cannot be changed.*
- *When you change the subject you are shooting or the shooting location, set it back to ±0 as described in step **4** and take a snapshot to check the flash brightness. After doing this adjust to your desired brightness.*


Operation Switch
A
M
Lock Button
Power lamp
OFF
CAMERA
5S
DSC
PLAY
MENU/SET Dial
Power Switch

Using Menu For Detailed Adjustment

This camcorder is equipped with an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings (☞ pg. 35 – 39).

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to the desired function.

- If the setting you want cannot be found in the Menu Screen, place the highlight bar on "END", then go to step 7.

4 MAKE SETTING

Press **MENU/SET**. The setting procedure depends on the function you select.

If you select "FOCUS", "EXPOSURE", "W.BALANCE", "FADER/WIPE", "P.AE/EFFECT" or "FLASH ADJ." . . .

..... see respective pages (FOCUS: ☞ pg. 47, EXPOSURE: ☞ pg. 48, W.BALANCE: ☞ pg. 50, FADER/WIPE: ☞ pg. 41, P.AE/EFFECT: ☞ pg. 44, FLASH ADJ.: ☞ pg. 33) and do each procedure from step **4**.

If you select "TO MODE MENU" . . .

..... the Mode Menu appears. Go to step **5**.

5 SELECT FUNCTION PARAMETERS IN MODE MENU

Rotate **MENU/SET** to move the highlight bar to the desired function and press it.

If you select a function other than "TO DATE/TIME MENU" or "TO SYSTEM MENU" . . .

..... each function's parameter starts blinking. Rotate **MENU/SET** until the desired parameter appears. Go to step 7.

If you select "TO DATE/TIME MENU" . . .

..... the Date/Time Menu appears. Go to step **6**.

If you select "TO SYSTEM MENU" . . .

..... the System Menu appears. Go to step **6**.

6 SELECT FUNCTION PARAMETERS IN DATE/TIME MENU OR SYSTEM MENU

Rotate **MENU/SET** to move the highlight bar to the desired function, then press it.

If you select "DATE/TIME" . . . ☞ pg. 11.

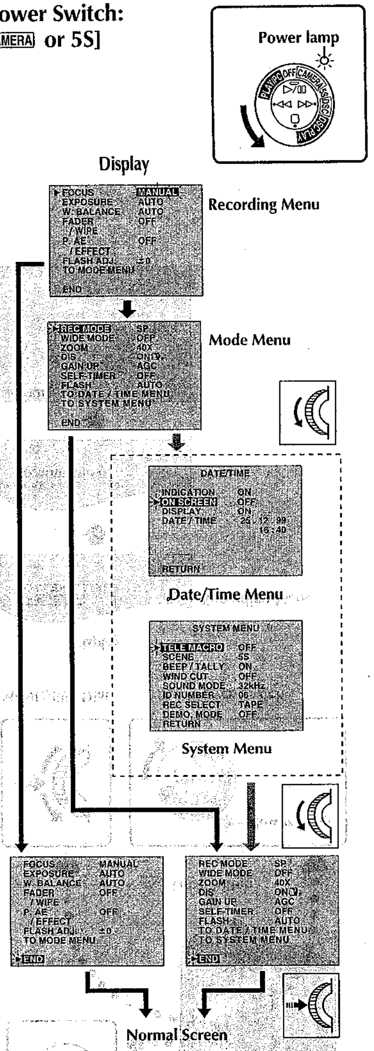
If you select other functions . . .

..... rotate **MENU/SET** until the desired parameter appears, then press it. The highlight bar automatically moves to "RETURN". Go to step 7.

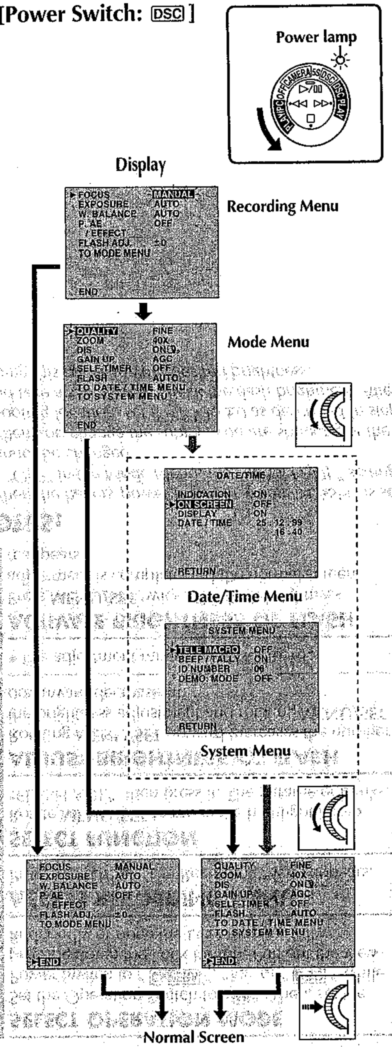
7 CLOSE MENU SCREEN

Press **MENU/SET** as many times as necessary to return to the normal screen.

[Power Switch: CAMERA or 5S]


Power lamp
Display
FOCUS MANUAL
EXPOSURE AUTO
W. BALANCE AUTO
FADER / WIPE OFF
P. AE / EFFECT OFF
FLASH ADJ. ±0
TO MODE MENU
END
Recording Menu
REC MODE SP
WIDE MODE OFF
ZOOM 40X
DIS ON
GAIN UP AGC
SELF-TIMER OFF
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END
Mode Menu
DATE/TIME
INDICATION ON
ON SCREEN OFF
DISPLAY ON
DATE / TIME 25 . 12 . 99 16 : 40
RETURN
Date/Time Menu
SYSTEM MENU
TELE MACRO OFF
SCENE 5S
BEEP / TALLY ON
WIND CUT OFF
SOUND MODE 32kHz
ID NUMBER 06
REC SELECT TAPE
DEMO. MODE OFF
RETURN
System Menu
Normal Screen

[Power Switch: DSC]


Power lamp
Display
FOCUS MANUAL
EXPOSURE AUTO
W. BALANCE AUTO
P. AE / EFFECT OFF
FLASH ADJ. ±0
TO MODE MENU
END
Recording Menu
QUALITY FINE
ZOOM 40X
DIS ON
GAIN UP AGC
SELF-TIMER OFF
FLASH AUTO
TO DATE / TIME MENU
TO SYSTEM MENU
END
Mode Menu
DATE/TIME
INDICATION ON
ON SCREEN OFF
DISPLAY ON
DATE / TIME 25 . 12 . 99 16 : 40
RETURN
Date/Time Menu
SYSTEM MENU
TELE MACRO OFF
BEEP / TALLY ON
ID NUMBER 06
DEMO. MODE OFF
RETURN
System Menu
Normal Screen

NOTES:

- *"FADER/WIPE" appears in the Recording Menu only when the Power Switch is set to "CAMERA" or "5S".*
- *"REC MODE" and "WIDE MODE" appear in the Mode Menu only when the Power Switch is set to "CAMERA" or "5S".*
- *"QUALITY" appears in the Mode Menu only when the Power Switch is set to "DSC".*
- *"SCENE", "WIND CUT", "SOUND MODE" and "REC SELECT" appear in the System Menu only when the Power Switch is set to "CAMERA" or "5S".*

Recording Menu Explanations

FOCUS	Refer to "Focusing" (☞ pg. 46, 47).
EXPOSURE	Refer to "Exposure Control" and "Iris Lock" (☞ pg. 48, 49).
W.BALANCE	Refer to "White Balance Adjustment" and "Manual White Balance Operation" (☞ pg. 50, 51).
FADER/WIPE	Refer to "Fade/Wipe Effects" (☞ pg. 41 – 43).
P.AE/EFFECT	Refer to "Program AE With Special Effects" (☞ pg. 44, 45).
FLASH ADJ.	Refer to "Flash Brightness Adjustment" (☞ pg. 33).
TO MODE MENU	Refer to "Mode Menu Explanations". (☞ pg. 37).

Mode Menu Explanations

REC MODE	Allows you to set the recording mode (SP or LP) depending on your preference (☞ pg. 13).	
WIDE MODE	**OFF**	Select "OFF" when you want to use neither "SQUEEZE" nor "CINEMA".
	SQUEEZE [W]	For playback on TVs with an aspect ratio of 16:9. Naturally expands the image to fit the screen without distortion. [W] appears. When using this mode, refer to your wide-screen TV's instruction manual. During playback/recording on 4:3 TVs/LCD monitor/viewfinder, the image is elongated vertically.
	CINEMA □	Inserts black bands at the top and bottom of the screen. During playback on wide-screen TVs, the black bands at the top and bottom of the screen are cut and the screen ratio becomes 16:9. When using this mode, refer to your wide-screen TV's instruction manual. During playback/recording on 4:3 TVs/LCD monitor/viewfinder, black bands are inserted at the top and bottom of the screen and the image appears like a letterboxed 16:9 movie.
QUALITY	Allows you to set the Picture Quality mode (FINE, STANDARD or ECONOMY) depending on your preference (☞ pg. 15).	
ZOOM	**10X**	When set to "10X" while using digital zoom, the zoom magnification will reset to 10X since digital zoom will be disengaged.
	40X	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 10 times (the optical zoom limit), to a maximum of 40 times digital magnification.
	100X	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 10 times (the optical zoom limit), to a maximum of 100 times digital magnification.
DIS	**ON**	To compensate for unstable images caused by camera-shake, particularly at high magnification. **NOTES:** ● *Accurate stabilisation may not be possible if hand shake is excessive, or under the following conditions:* • *When shooting subjects with vertical or horizontal stripes.* • *When shooting dark or dim subjects.* • *When shooting subjects with excessive backlighting.* • *When shooting scenes with movement in various directions.* • *When shooting scenes with low-contrast backgrounds.* ● *Switch off the Digital Image Stabilizer (DIS) when recording with the camcorder on a tripod.* ● *The "" indicator appears blinking if the Stabilizer cannot be used.*
	OFF	
GAIN UP	**AGC**	This is automatically activated during Full Auto mode. The overall appearance may be grainy, but the image is bright.
	AUTO A☀	The shutter speed is automatically adjusted (1/25 — 1/200 sec.). Shooting a subject in low or poor lighting at 1/25 sec. shutter speed provides a brighter image than in the AGC mode, but the subject's movements are not smooth or natural. When set to this mode, "**A☀**" is displayed.
	OFF	Allows you to shoot dark scenes with no picture brightness adjustment.
SELF-TIMER	Refer to "Self-Timer" (☞ pg. 29).	
FLASH	Refer to "Snapshot Flash (Auto Flash)" (☞ pg. 32).	
TO DATE/TIME MENU	Refer to "Date/Time Menu Explanations" (☞ pg. 38).	
TO SYSTEM MENU	Refer to "System Menu Explanations" (☞ pg. 39).	

▨ : Factory-preset

CONTINUED ON NEXT PAGE

Date/Time Menu Explanations

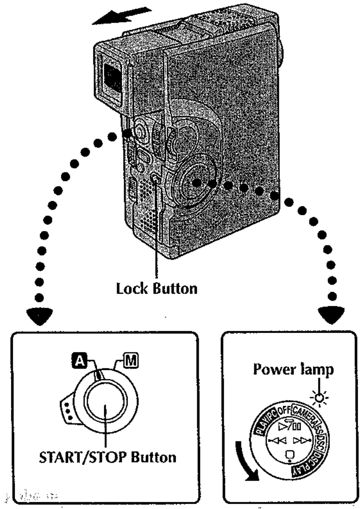
INDICATION	**ON**	Makes all the indications appear in the camcorder (☞ pg. 27).
	OFF	Keeps all the indications (except the tape running indicator, warnings, etc.) from appearing in the camcorder (☞ pg. 27).
ON SCREEN	**OFF**	Keeps the camcorder's display from appearing on the connected TV screen.
	ON	Makes the camcorder's display appear on screen when the camcorder is connected to a TV.
DISPLAY	**ON**	Makes the date/time settings appear in the camcorder (☞ pg. 26).
	OFF	Keeps the date/time settings from appearing in the camcorder.
DATE/TIME	Allows you to set the current date and time (☞ pg. 11).	

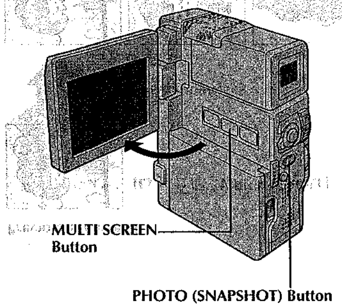
▨: Factory-preset

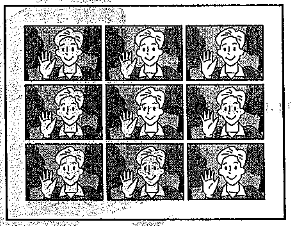
System Menu Explanations

TELE MACRO	**OFF**	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance more than 1 m to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm. • Depending on the zoom position, the lens may go out of focus.
	ON	
SCENE	**5S**	☞ pg. 28.
	5SD	☞ pg. 28.
	ANIM.	Allows you to record a 1/3-second clip. By using an inanimate object and changing its position between shots, you can record the subject as though it is moving (☞ pg. 28).
BEEP/TALLY	**ON**	The tally lamp comes on to signal the start of recording. The beep sounds when the power is turned on or off, and at the beginning and end of recording. Also to activate the shutter sound effect (☞ pg. 23, 31).
	OFF	The tally lamp remains off at all times. Even though not heard while shooting, shutter sound is recorded on the tape.
WIND CUT	**OFF**	Disengages the function which cuts down on noise created by wind.
	ON	Helps cut down on noise created by wind. • "🎤" appears. • The quality of the sound will change. This is normal.
SOUND MODE	**32 kHz**	Enables recording of stereo sound on four separate channels, and is recommended for use when performing audio dubbing.
	48 kHz	Enables recording of stereo sound on two separate channels.
ID NUMBER	This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). The numbers range from 01 to 99. Factory setting is 06.	
REC SELECT	**TAPE**	When Snapshot recording is performed with the Power Switch set to "CAMERA" or "5S", still images are recorded only onto the tape.
	TAPE & CARD	When Snapshot recording is performed with the Power Switch set to "CAMERA" or "5S", still images are recorded not only onto the tape but also in the MultiMediaCard.
DEMO. MODE	**OFF**	Automatic demonstration will not take place.
	ON	Demonstrates certain functions such as Program AE with special effects, etc., and can be used to confirm how these functions operate. When "DEMO. MODE" is set to "ON" and the Recording Menu is closed, demonstration starts. **NOTES:** ● *If a tape is in the camcorder, the demonstration cannot be turned on.* ● *By turning off the camcorder, "DEMO. MODE" is set to "OFF" automatically.*

▨: Factory-preset







Multi Screen mode

Multi Screen Mode

The screen is divided into 9 quadrangles, with the scene you are aiming at appearing in each one. This 9-quadrangle image can be recorded onto a tape or into a MultiMediaCard.

1 SELECT OPERATION MODE

Set the Operation Switch to "A" or "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button.

2 ACTIVATE MULTI SCREEN

Press **MULTI SCREEN**.

[Power Switch: "CAMERA"]

If you press MULTI SCREEN during recording . . .

.... the screen will be divided into 9 quadrangles and they will be recorded onto a tape.

[Power Switch: "CAMERA" or "5S"]

If you press MULTI SCREEN during Record-Standby . . .

.... the screen will be divided into 9 quadrangles. Press **START/STOP** to start recording with 9 quadrangles.

[Power Switch: "DSC"]

If you press MULTI SCREEN during Record-Standby . . .

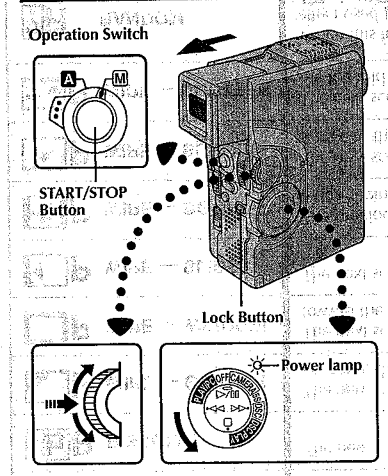
.... the screen will be divided into 9 quadrangles. Press **PHOTO (SNAPSHOT)** to record with 9 quadrangles.

To Return To The Normal Screen . . .

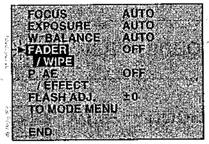
.... press **MULTI SCREEN** again.

NOTES:

- *In the Multi Screen mode, it is not possible to bring up the Menu Screen.*
- *During Digital Zoom, the Multi Screen mode is not available.*
- *The Multi Screen mode is available during video playback as well.*



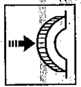
Display

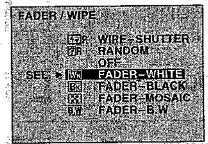


```
FOCUS        AUTO
EXPOSURE     AUTO
W.BALANCE    AUTO
▶FADER       OFF
  / WIPE
P.AE         OFF
  / EFFECT
FLASH ADJ.   ±0
TO MODE MENU

END
```

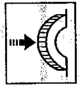
Recording Menu

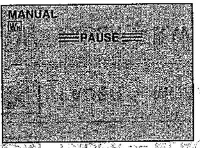




```
FADER / WIPE
      ?R  WIPE–SHUTTER
      ?R  RANDOM
          OFF
SEL. ▶WH  FADER–WHITE
      BK  FADER–BLACK
          FADER–MOSAIC
      B.W FADER–B.W
```

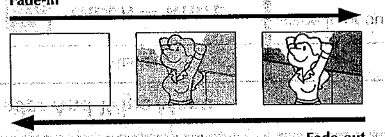
FADER/WIPE Menu





```
MANUAL
WH
       ═══PAUSE═══
```

[Ex.: WH FADER – WHITE]



Fade/Wipe Effects

IMPORTANT:

If certain modes of Programme AE with special effects (☞ pg. 44) are activated, some Fade/Wipe Effects cannot be used. If you select a Fade/Wipe Effect that is unusable in the current situation, the indication blinks.

These effects let you make pro-style scene transitions. Use these to spice up the transition from one scene to the next. You can also vary transitions from scene to scene.

This function is available only when the Power Switch is set to "CAMERA".

EFFECT SELECTION

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then set the Power Switch to "CAMERA" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS "FADER/WIPE" MENU

Rotate **MENU/SET** to move the highlight bar to "FADER/WIPE", then press it.

4 SELECT EFFECT

Rotate **MENU/SET** to move the highlight bar to the desired function, then press it.

- The FADER/WIPE Menu disappears and the effect is reserved. The indicator representing the selected effect appears.

FADE/WIPE SELECTION
(WH, BK, ⊠, B.W, ◣, □, ◀, ◆, ▲, ⬍ and ?R)

A scene gradually appears on a black, white, or black-and-white screen (Fade-in or Wipe-in); or disappears, leaving a black, white, or black-and-white screen (Fade-out or Wipe-out).

Fade or Wipe works when recording is started or when you stop recording.

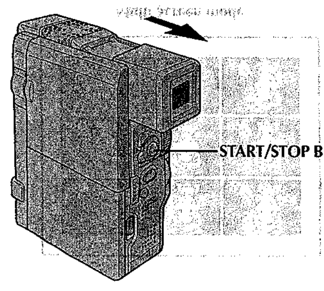
Before the following step, perform the above steps 1 through 4.

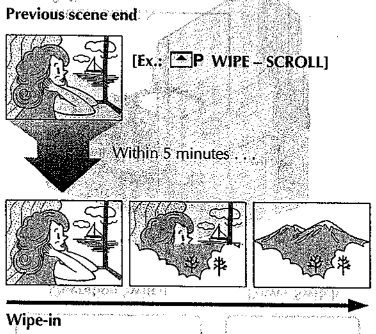
5 START OR END RECORDING

Press **START/STOP** to activate Fade-in/out or Wipe-in/out.

NOTE:

☞ pg. 42.





PICTURE WIPE OR DISSOLVE SELECTION (⧉P, ◣P, □P, ◧P, ◫P, ▲P and ⬍P)

Combine the Picture Wipe and Dissolve functions for a professional transition effect. There are 6 Picture Wipe effects and 1 Dissolve effect. The Picture Wipe or Dissolve works when recording is started.
Before the following steps, perform steps 1 through 4 on pg. 41.

5 STORE SCENE IN MEMORY

Engage the Record-Standby mode.

If you select Picture Wipe/Dissolve during recording . . .

.... press **START/STOP** when one scene is finished. The point at which the scene ended is stored in memory.

If you select Picture Wipe/Dissolve during Record-Standby mode . . .

.... press **START/STOP** to start recording and press it again when one scene is finished. The point at which the scene ended is stored in memory.

If you select Picture Wipe/Dissolve during Record-Standby mode after performing a Picture Wipe/ Dissolve . . .

.... the point at which the scene ended is already stored in memory.

6 START RECORDING

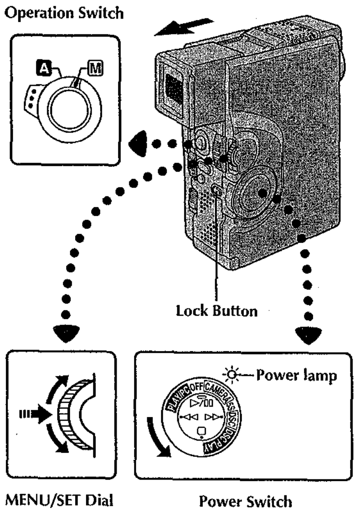
If you start recording a new scene within 5 minutes of the end of the previous recording (without having turned the camcorder's power off), the previous scene wipes out, revealing the new scene.

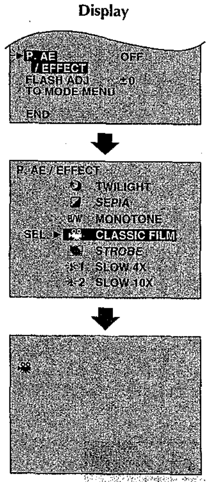
NOTES:

- *You can extend the length of a Fade or Wipe by pressing and holding* ***START/STOP*** *.*
- *If the power is turned off after a scene is finished recording, the stored point is erased.*
  This disables the Picture Wipe/Dissolve combination. When this happens, the Picture Wipe/Dissolve indicator blinks. Try recording again, but do not turn the power off when you are finished. Please be advised that power also shuts off automatically if 5 minutes elapse in the Record-Standby mode.
- *The sound at the end of the last recorded scene is not stored.*

Fader And Wipe Menu

Menu	Effect
WH FADER — WHITE	Fade in or out with a white screen.
BK FADER — BLACK	Fade in or out with a black screen.
▦ FADER — MOSAIC	Fade in or out with a full-screen mosaic effect.
B.W FADER — B.W	Fade in to a colour screen from a black and white screen, or fade out from colour to black and white.
◣ WIPE — CORNER	Wipe in on a black screen from the upper right to the lower left corner, or wipe out from lower left to upper right, leaving a black screen.
□ WIPE — WINDOW	The scene starts in the centre of a black screen and wipes in toward the corners, or comes in from the corners, gradually wiping out to the centre.
◧ WIPE — SLIDE	Wipe in from right to left, or wipe out from left to right.
◫ WIPE — DOOR	Wipe in as the two halves of a black screen open to the left and right, revealing the scene, or wipe out and the black screen reappears from left and right to cover the scene.
▲ WIPE — SCROLL	The scene wipes in from the bottom to the top of a black screen, or wipes out from top to bottom, leaving a black screen.
⬍ WIPE — SHUTTER	Wipe in toward the centre of a black screen from the top and bottom, or wipe out from the centre toward the top and bottom, leaving a black screen.
⧉P DISSOLVE	The new scene gradually appears as the old one gradually disappears.
◣P WIPE — CORNER	The new scene wipes in over the previous one from the upper right corner to the lower left corner.
□P WIPE — WINDOW	The next scene gradually wipes in from the centre of the screen toward the corners, covering the previous scene.
◧P WIPE — SLIDE	The next scene gradually wipes in over the previous one from right to left.
◫P WIPE — DOOR	The previous scene wipes out from the centre to the right and left, like a door being pushed open to reveal the next scene.
▲P WIPE — SCROLL	The new scene wipes in over the last one from the bottom of the screen to the top.
⬍P WIPE — SHUTTER	The new scene wipes in over the previous one from the centre toward the top and bottom of the screen.
?R RANDOM	When this function is activated, the camcorder randomly selects the effect used in scene transition (from WH, BK, □, ▲, ⬍, ◧, ◫, and ◣). The Picture Wipe/Dissolve function is not available.





The indicator for the selected mode appears, and the selected mode is engaged.

Programme AE With Special Effects

IMPORTANT:

If certain Fades or Wipes (☞ pg. 43) are activated, some modes of Programme AE with special effects cannot be used. If you select a mode that is unusable in the current situation, the mode's symbol blinks.

You can choose any one of the effects from the P.AE/ EFFECT Menu.

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then set the Power Switch to "CAMERA" or "DSC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS "P.AE/EFFECT" SELECT MENU

Rotate **MENU/SET** to move the highlight bar to "P.AE/ EFFECT", then press it.

4 SELECT MODE

Move the highlight bar to the desired mode by rotating **MENU/SET**, then press it.

- The P.AE/EFFECT Menu disappears and the selected mode is activated. The symbol of the selected mode appears.

5 DISABLE MODE

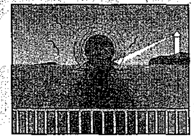
To turn off the selected mode, re-access the P.AE/ EFFECT Menu and move the highlight bar to "OFF" by rotating **MENU/SET**. Then press it.

NOTES:

- *Programme AE with special effects can be changed during recording or during Record-Standby.*
- *The following modes are available only when the Power Switch is set to "CAMERA": "CLASSIC FILM", "STROBE" and "VIDEO ECHO".*

SHUTTER (Variable Shutter Speed)

1/50–The shutter speed is fixed at 1/50th of a second. Black bands that usually appear when shooting a TV screen become narrower.
1/100–The shutter speed is fixed at 1/100th of a second. The flickering that occurs when shooting under a fluorescent light or mercury-vapour lamp is reduced.
1/250, 1/500–These settings allow fast-moving images to be captured one frame at a time, for vivid, stable slow-motion playback. The faster the shutter speed, the darker the picture becomes. Use the shutter function under good lighting conditions.



TWILIGHT

Makes evening scenes look more natural. White Balance (☞ pg. 50) is initially set to ☀, but can be changed to your desired setting. When Twilight is chosen, the camcorder automatically adjusts the focus from approx. 10 m to infinity. From less than 10 m, adjust the focus manually.

SEPIA

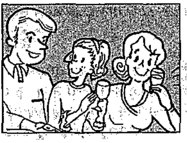
Recorded scenes have a brownish tint like old photos. Combine this with the Cinema mode for a classic look.

B/W MONOTONE

Like classic black and white films, your footage is shot in B/W. Used together with the Cinema mode, it enhances the "classic film" effect.

CLASSIC FILM*

Gives recorded scenes a strobe effect.



STROBE*

Your recording looks like a series of consecutive snapshots.

SLOW (Slow Shutter)

You can light dark subjects or areas even brighter than they would be under good natural lighting.

1 SLOW 4X

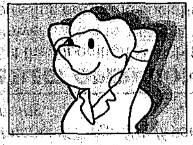
The Shutter Speed is set to 1/12.5th of a second to quadruple the sensitivity.

2 SLOW 10X

The Shutter Speed is set to 1/5th of a second to provide 10 times the sensitivity.

NOTES:

- *When using "SLOW", the image takes on a strobe-like effect.*
- *Use "SLOW" only in dark areas.*
- *The Manual Focus indication may appear and flash when "SLOW" is in use.*
- *If the image is out of focus, adjust manually. It is also recommended that you use a tripod, if possible.*



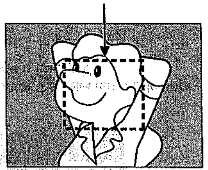
VIDEO ECHO*

Adds a "ghost" to the subject, giving your recording a "fantasy" feeling.

---

*Available only when the Power Switch is set to "CAMERA".

Focus detection zone



Focusing

AUTO FOCUS

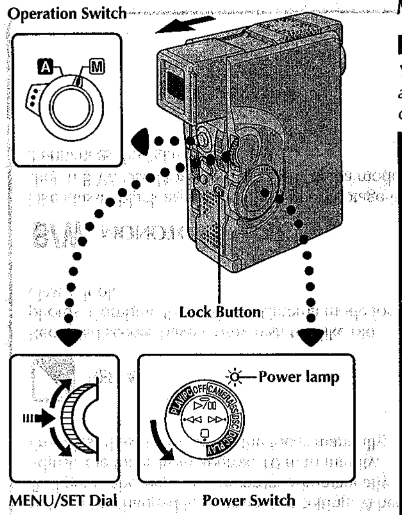
The camcorder's Full Range AF system offers continuous shooting ability from close-up (as close as approx. 5 cm to the subject) to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):

- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

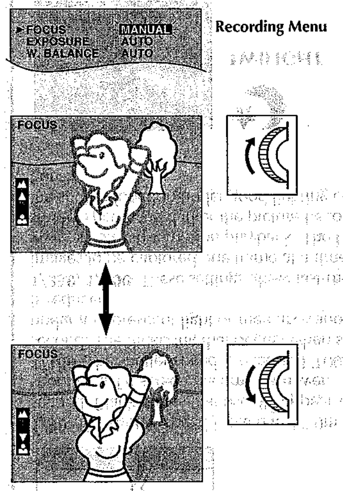
* The following low-contrast warnings appear blinking: ⛰, ▲, ▼ and 👤

NOTES:

- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom-out first (☞ pg. 24). If zoomed-in in the auto focus mode, the camcorder could automatically zoom out depending on the distance between the camcorder and the subject. When "TELE MACRO" (☞ pg. 39) is activated, the camcorder will not zoom out automatically.*



Display



MANUAL FOCUS

NOTE:

You should already have made the necessary viewfinder adjustments (☞ pg. 10). If you have not, do so before continuing.

1 SELECT OPERATION MODE
Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU
Press **MENU/SET**. The Recording Menu appears.

3 ACCESS "FOCUS"
Rotate **MENU/SET** to move the highlight bar to "FOCUS", then press it.

4 ACCESS MANUAL FOCUS
Rotate **MENU/SET** to display "MANUAL", then press it. The Recording Menu disappears and "FOCUS" is displayed in the upper left corner. The focus is locked at this point.

5 ADJUST FOCUS
To farther subject . . .
.... rotate **MENU/SET** upward. "▲" appears and blinks. Go to step **6**.
To nearer subject . . .
.... rotate **MENU/SET** downward. "▼" appears and blinks. Go to step **6**.

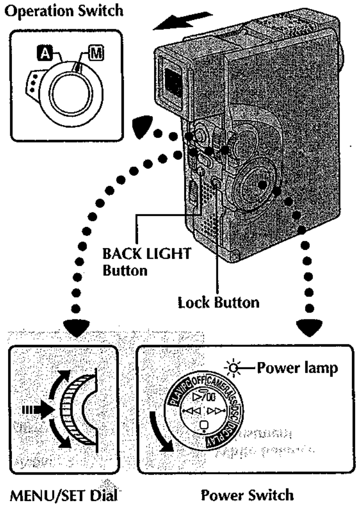
6 END ADJUSTMENT OF FOCUS
Press **MENU/SET**. Focus adjustment is complete. The indication changes from "FOCUS" to "MANUAL".

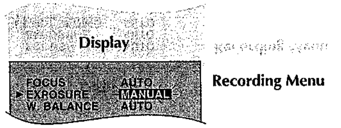
- If you want to reset the focus, repeat from step **2**.

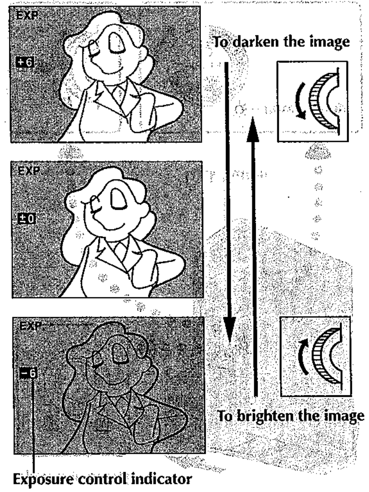
To Change To Auto Focus . . .
.... rotate **MENU/SET** to display "AUTO" then press it in step **4**. The manual focus indicators disappear. Or, set the Operation Switch to "A".

NOTES:

- *After the Power Switch is set to "OFF", Manual Focus is reset to "AUTO".*
- *Be sure to focus the lens in the maximum telephoto position when you use the Manual Focus mode. If you focus in on a certain subject in the wide-angle position, sharply focused images cannot be obtained when zoomed up because the depth-of-field is reduced at longer focal lengths.*
- *When the focus level cannot be adjusted any farther or closer, "⛰" or "👤" will blink.*







Exposure control indicator

Exposure Control

This feature automatically adjusts the iris for the best available picture quality, but you can override and make the adjustment manually.

1 SELECT OPERATION MODE

Set the Operation Switch to “M”. Then, set the Power Switch to “CAMERA”, “5S” or “DSC” while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS “EXPOSURE”

Rotate **MENU/SET** to move the highlight bar to “EXPOSURE”, then press it.

4 ACCESS EXPOSURE CONTROL

Rotate **MENU/SET** to display “MANUAL”, then press it. The Recording Menu disappears. “EXP.” and the highlight bar on the exposure control indicator are displayed.

5 ADJUST EXPOSURE

To brighten the image . . .

..... rotate **MENU/SET** upward. The exposure control indicator increases (maximum +6).
Go to step **6**.

To darken the image . . .

..... rotate **MENU/SET** downward. The exposure control indicator decreases (maximum –6).
Go to step **6**.

6 END ADJUSTMENT OF EXPOSURE

Press **MENU/SET**. Exposure adjustment is complete. The indication “EXP.” changes to “MANUAL” and the highlight bar on the exposure control indicator goes out.

- If you want to reset the exposure, repeat step **2**.

To Return To Automatic Exposure Control . . .

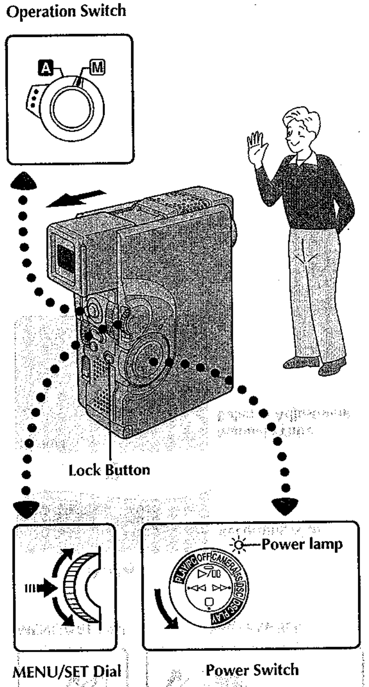
..... rotate **MENU/SET** to display “AUTO” then press it in step **4**. The exposure control indicator disappears. Or set the Operation Switch to “A”.

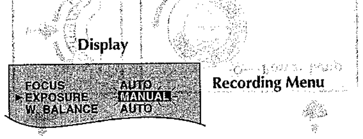
NOTES:

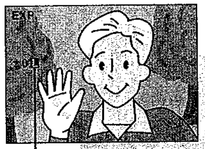
- *After the Power Switch is set to “OFF”, Exposure Control is reset to “AUTO”.*
- *Manual exposure adjustment is recommended in the following situations:*
  - *When shooting using reverse lighting or when the background is too bright.*
  - *When shooting on a reflective natural background such as at the beach or when skiing.*
  - *When the background is overly dark or the subject light.*

To Brighten The Subject Quickly . . .

..... press **BACK LIGHT**. ▨ is displayed and the subject is brightened. If pressed again, ▨ disappears and the brightness returns to the previous level. The value shown by the exposure control indicator plus 2 is the back light compensation level. The maximum compensation level is +6. Back light compensation is also available when the Operation Switch is set to “A”.







Iris lock indicator

Iris Lock

Use this function when shooting a moving subject, when zooming, when the subject changes its distance (thus its size in the LCD monitor or the viewfinder), or when you want to lock the brightness level.

When the subject is close, keep the iris locked. Even when the subject moves away from you, the image will not darken or brighten.

1 SELECT OPERATION MODE

Set the Operation Switch to “M”. Then, set the Power Switch to “CAMERA”, “5S” or “DSC” while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS “EXPOSURE”

Rotate **MENU/SET** to move the highlight bar to “EXPOSURE”, then press it.

4 ACCESS EXPOSURE CONTROL

Rotate **MENU/SET** to display “MANUAL”, then press it. “EXP.” is displayed.

5 CENTRE SUBJECT, LOCK IRIS

Adjust zoom so that the subject fills the LCD monitor or the viewfinder, then press and hold **MENU/SET** for over 2 seconds. The exposure control indicator and “L” appear, indicating that the iris is locked.
Press **MENU/SET**. The indication displayed in the upper left corner changes from “EXP.” to “MANUAL”.

To Return To Automatic Iris Control . . .

..... rotate **MENU/SET** to display “AUTO” then press it in step **4**. The exposure control indicator and “L” disappear. Or, set the Operation Switch to “A”.

NOTE:

Iris lock is recommended in the following situations:

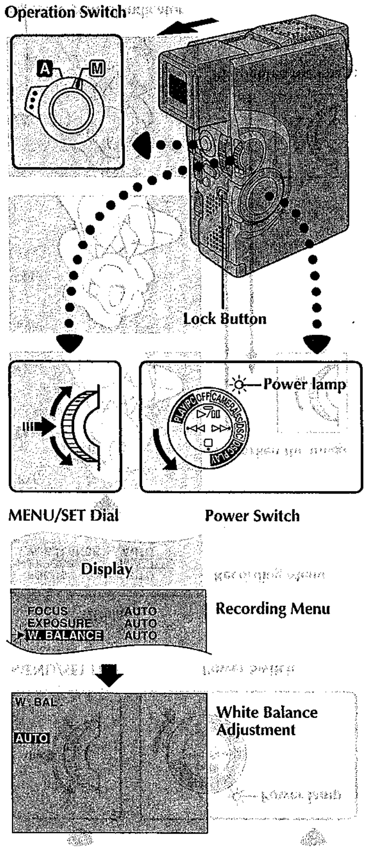
- *When shooting on a reflective natural background such as at the beach or when skiing.*
- *When shooting objects under a spotlight.*
- *When the subject is backing away.*
- *When zooming.*

To Lock The Exposure Control And The Iris . . .

..... after step **4**, adjust the exposure rotating **MENU/SET**. Then lock the iris in step **5**. For automatic locking, rotate **MENU/SET** to display “AUTO”, then press it in step **4**. The iris becomes automatic after about 2 seconds.

Iris

Works like the pupil of the human eye. In a well-lit environment, the human pupil contracts to keep too much light from entering. In low lighting, the pupil dilates to allow more light in.



White Balance Adjustment

A term that refers to the correctness of colour reproduction under various lighting. If the white balance is correct, all other colours will be accurately reproduced.
The white balance is usually adjusted automatically. However, the more advanced camcorder operator would prefer to control this function manually and achieve a more professional colour/tint reproduction.

1 SELECT OPERATION MODE

Set the Operation Switch to "M". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS RECORDING MENU

Press **MENU/SET**. The Recording Menu appears.

3 ACCESS "W.BALANCE"

Rotate **MENU/SET** to move the highlight bar to "W.BALANCE", then press it.

4 ACCESS WHITE BALANCE ADJUSTMENT

The Recording Menu disappears. "W.BAL." appears in the upper left corner and the currently selected mode indication is also displayed.

5 SET FUNCTION PARAMETERS

Cycle through the available settings of the selected functions by rotating **MENU/SET**, and stop when the one you want is displayed.

"**AUTO**" – The white balance is adjusted automatically. This is the factory preset position.
"◪" – When shooting with the white balance already having been set on the subject (☞ pg. 51).
"☀" – When shooting outdoors on a sunny day.
"☁" – When shooting outdoors on a cloudy day.
"✹" – When using a video light or other similar type of lighting.

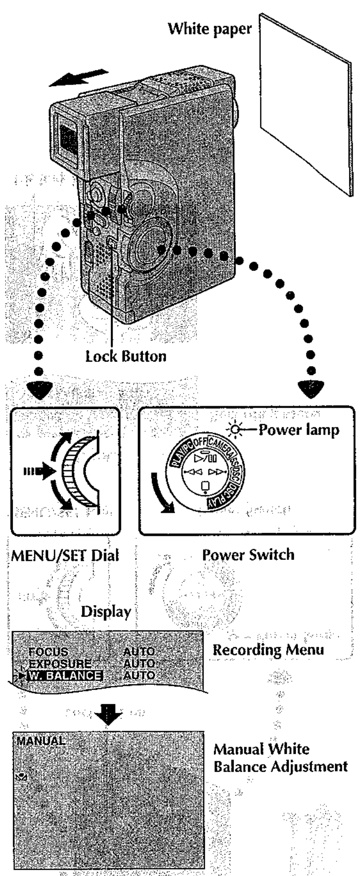
6 CLOSE WHITE BALANCE ADJUSTMENT

Press **MENU/SET** again. Selection is complete. The indication "W.BAL." changes to "MANUAL".

To Return To Automatic White Balance . . .
.... select "AUTO" in step **5**. Or, set the Operation Switch to "A".

NOTE:

White balance cannot be used when Sepia or Monotone (☞ pg. 45) is activated.



Manual White Balance Operation

If the camera is operating in Manual mode "M", perform Manual White Balance when shooting under various types of lighting.

1 SELECT OPERATION MODE

Follow steps **1** through **5** of the white balance adjustment (☞ pg. 50), and select "◪ MAN.".

2 SET MANUAL WHITE BALANCE

Hold a sheet of plain white paper in front of the subject. Adjust zoom or position yourself so that the white paper fills the screen.

3 ENTER SETTING

Press **MENU/SET** until ◪ begins blinking.

- When the setting is completed, ◪ stops blinking.

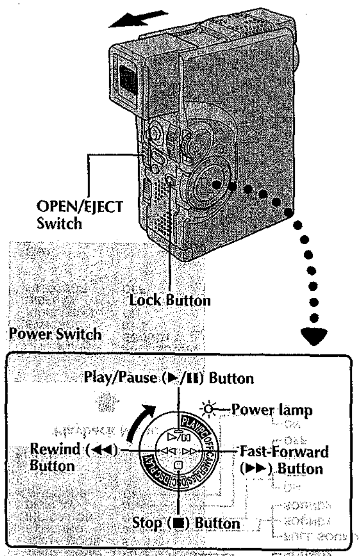
4 EXIT MANUAL WHITE BALANCE ADJUSTMENT

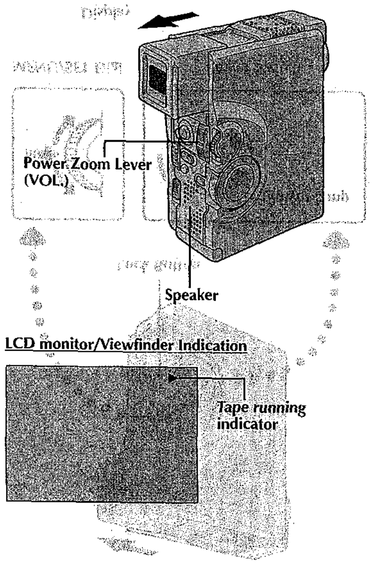
Press **MENU/SET**. The indication "W.BAL." changes to "MANUAL" and only the Manual White Balance indicator ◪ is displayed.

To Change The Tint For Recording . . .
.... in step **2**, substitute coloured paper for white. The white balance is adjusted based on the colour, changing the tint. Red paper — deeper green; blue paper — orange; yellow paper — deeper purple.

NOTES:

- *In step 2, it may be difficult to focus on the white paper in some circumstances. In such a case, adjust focus manually (☞ pg. 47).*
- *A subject can be shot under various types of lighting conditions indoors (natural, flourescent, candlelight, etc.). Because the colour temperature is different depending on the light source, the tint of the subject will differ depending on the white balance settings. Use this function for a more natural result.*
- *Once you adjust white balance during Manual White Balance operation, the setting is retained even if the power is turned off or the battery removed.*





1 LOAD A CASSETTE

Slide **OPEN/EJECT** in the direction of the arrow, then swing the cassette cover open until it locks. The holder opens automatically.
Insert a tape and press "PUSH HERE" to close the cassette holder.

2 SELECT OPERATION MODE

Set the Power Switch to "PLAY/PC" while pressing down the Lock Button. The power lamp lights.

3 PLAY BACK

Press ▶/II. The playback picture appears.

4 STOP PLAYBACK

Press ■.

Rewind or Fast-forward the tape

Press ◀◀ to rewind, or ▶▶ to fast-forward the tape during Stop mode.

NOTES:

- *If Stop mode continues for 5 minutes when the power supply is a battery pack, the camcorder shuts off automatically. To turn on again, set the Power Switch to "OFF", then to "PLAY/PC".*
- *The playback picture can also be viewed in the viewfinder (with the viewfinder pulled out) or on a connected TV (☞ pg. 70, 71). Camcorder operation is the same as described in this section.*
- *You can also view the playback picture on the LCD monitor with it flipped over and retracted.*
- *LCD monitor/viewfinder indications:*
  - *When power is supplied from the battery pack: the "▭" battery pack remaining power indicator is displayed on the LCD monitor when it is turned on. When power is supplied through the DC cord: "▭" does not appear.*
  - *During Stop mode, none of the indications are displayed in the viewfinder.*
- *Copyguarded tapes cannot be played back. The screen displays a blue background.*

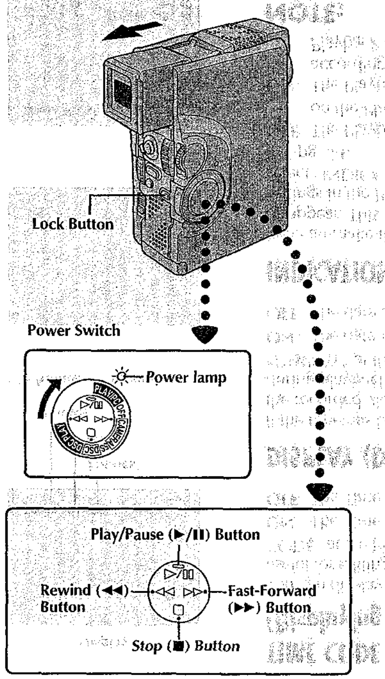
Speaker (or Headphones) Volume Control

You can adjust the speaker (or headphones connected to the headphones connector) volume by pushing the Power Zoom Lever.

1 ADJUST VOLUME

If you want to turn up the volume . . .
. . . slide the Power Zoom Lever (**VOL.**) towards "+".

If you want to turn down the volume . . .
. . . slide the Power Zoom Lever (**VOL.**) towards "–".



FEATURE: Still Playback

PURPOSE:
To pause during playback.

OPERATION:
1) Press ▶/II during playback.
2) To resume normal playback, press ▶/II again.

NOTES:

- *If still playback continues for more than about 3 minutes, the camcorder's Stop mode is automatically engaged. After 5 minutes in the Stop mode, the camcorder's power is automatically turned off.*
- *When ▶/II is pressed, the image may not pause immediately so that the camcorder can stabilise the still image. During this time, if **PAUSE** (**II**) on the remote control is pressed, Slow-Motion Playback will start. This is not a malfunction.*

FEATURE: Shuttle Search

PURPOSE:
To allow high-speed search in either direction.

OPERATION:
1) Press ▶▶ to forward or press ◀◀ to reverse during playback.
2) To resume normal playback, press ▶/II.

NOTES:

- *During playback, press and hold ◀◀ or ▶▶. The search continues as long as you hold the button. Once you release it, normal playback resumes.*
- *A slight mosaic effect appears on screen during Shuttle Search. This is not a malfunction.*

FEATURE: Slow-Motion Playback

Available only with the RM-V713U remote control (provided) (☞ pg. 82).

FEATURE: Frame-By-Frame Playback

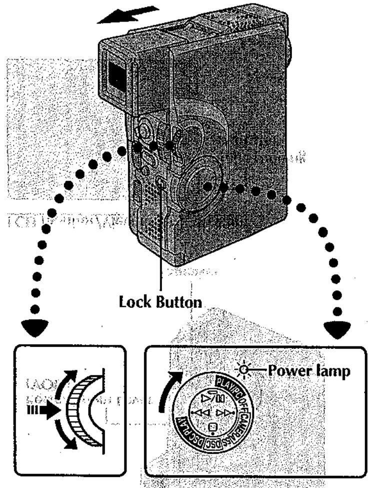
Available only with the RM-V713U remote control (provided) (☞ pg. 82).

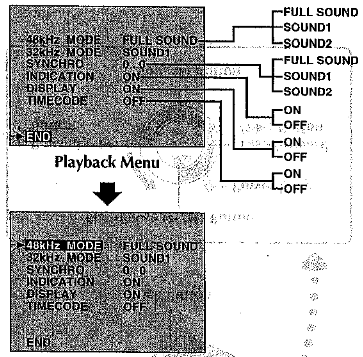
FEATURE: Playback Zoom

Available only with the RM-V713U remote control (provided) (☞ pg. 82).

FEATURE: Playback Special Effects

Available only with the RM-V713U remote control (provided) (☞ pg. 83).





Playback Menu

The Playback Menu allows you to set the following functions: *Playback Sound (32 kHz, 48 kHz), Synchro Comp, Indication, Display and Time Code.* The following procedure applies to all except *Synchro Comp* (☞ *pg. 88, 89*).

1 SELECT OPERATION MODE
Set the Power Switch to "PLAY/PC" while pressing down the Lock Button. Pull out the viewfinder fully or open the LCD monitor fully.

2 ACCESS PLAYBACK MENU
Press **MENU/SET**. The Playback Menu appears.

3 SELECT FUNCTION
Move the highlight bar to the desired function by rotating **MENU/SET**. Press it to activate.

4 SET FUNCTION PARAMETERS
Rotate **MENU/SET** to cycle through the available settings for the selected function, and stop when the desired setting appears. Then press **MENU/SET**, and the highlight bar automatically moves to "END".

- To set parameters for other functions, repeat steps **3** and **4**.

5 CLOSE MENU
Press **MENU/SET** again, and the menu disappears.

Playback Sound

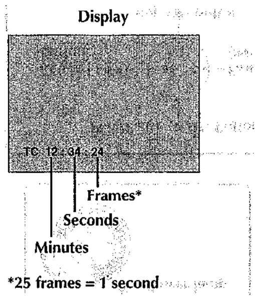
During playback, the camcorder detects the sound mode in which the recording was made, and plays the sound back. Select the type of sound to accompany your playback picture. (32 kHz is preset to "SOUND 1" and 48 kHz is preset to "FULL SOUND".)

Recording sound	Display	Output sound
32 kHz	FULL SOUND	Stereo sound
	SOUND 1	
	SOUND 2	
48 kHz	FULL SOUND	Stereo sound
	SOUND 1	"L" sound is output on both channels
	SOUND 2	"R" sound is output on both channels

When watching a tape recorded at 32 kHz, if you want to change the output sound, access the Playback Menu and, in step **3** on page 54, select "32 kHz MODE" and set it for "FULL SOUND", "SOUND 1" or "SOUND 2". When playing back a tape recorded at 48 kHz, set in the same manner.

NOTES:

- *You can also use the provided RM-V713U remote control's* ***AUDIO MONITOR*** *button to change the output sound (without having to access the Playback Menu). Make sure you point the remote control at the camcorder's remote sensor.*
- *During playback, the camcorder detects the sound mode in which the recording was made. This detection cannot be made during fast-forward or rewind. During playback the sound mode is displayed in the upper left corner.*



TIME CODE (Displaying The Time Code During Playback)

You can display the Time Code on screen during playback. This is especially useful for editing. This function is preset to "OFF". To turn it on, select "TIME CODE" at the Playback Menu and change the setting (☞ pg. 54).

ON– The Time Code is displayed on the playback screen.

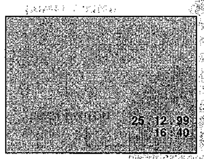
OFF– The Time Code does not appear.

DISPLAY (Displaying the Date During Playback)

If the time has been set, the date is automatically recorded separately from the recorded video signal. You can display or remove the date anytime during playback. This function is preset to "ON". To turn it off, select "DISPLAY" at the Playback Menu and change the setting (☞ pg. 54).

ON– The date is displayed on the playback screen.

OFF– The date is not displayed.

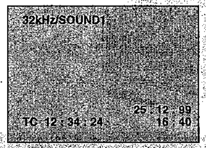


INDICATION

You can make the Playback Sound, Time Code and Date indications disappear. This function overrides the "TIME CODE" and "DISPLAY" settings in the Playback Menu. The factory-preset is "ON". To turn it off, select "INDICATION" in the Playback Menu and change the setting (☞ pg. 54).

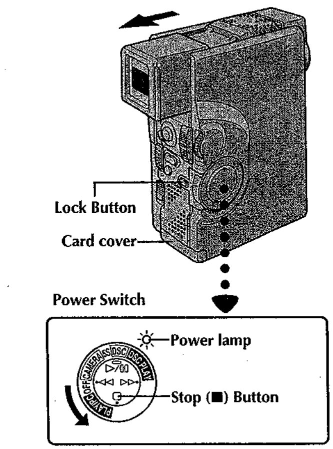
OFF– The Playback Sound, Time Code and Date indications do not appear on the Playback Screen.

ON– The Playback Sound, Time Code and Date indications are displayed according to how "TIME CODE" and "DISPLAY" are set in the Playback Menu.



NOTE:

If "INDICATION" is set in the Date/Time Menu, "INDICATION" in the Playback Menu will also be set to the same setting (☞ pg. 34 – 38).


Lock Button
Card cover
Power Switch
Power lamp
Stop (■) Button

Normal Playback

Images shot with the camcorder are automatically numbered, then stored in numerical order in the MultiMediaCard. You can view the stored images, one at a time, much like flipping through a photo album.

1 LOAD A MULTIMEDIACARD

Open the card cover. Insert a MultiMediaCard, then close the card cover.

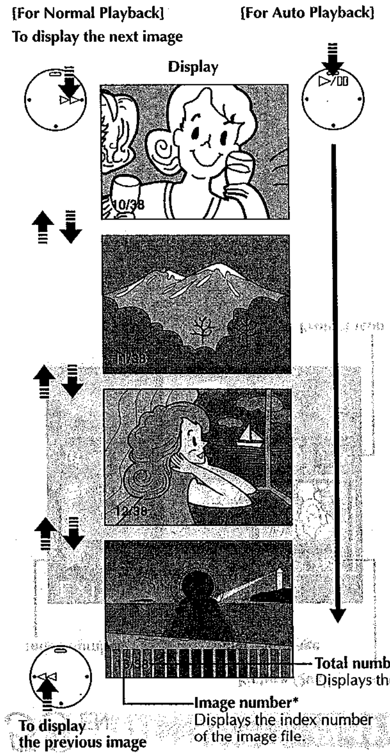
2 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.

3 DISPLAY ANOTHER IMAGE

Press ▶▶ to display the next image.
Press ◀◀ to display the previous image.


[For Normal Playback]
To display the next image
[For Auto Playback]
Display
10/38
12/38
To display the previous image

Total number of images*
Displays the total number of stored images.

Image number*
Displays the index number of the image file.

Auto Playback

You can run through all the images stored in memory automatically.

1 LOAD A MULTIMEDIACARD

Open the card cover. Insert a MultiMediaCard, then close the card cover.

2 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.

3 START AUTO PLAYBACK

Press ▶/II.

- If you press ◀◀ during Auto Playback, images are displayed in descending order.
- If you press ▶▶ during Auto Playback, images are displayed in ascending order.

4 STOP AUTO PLAYBACK

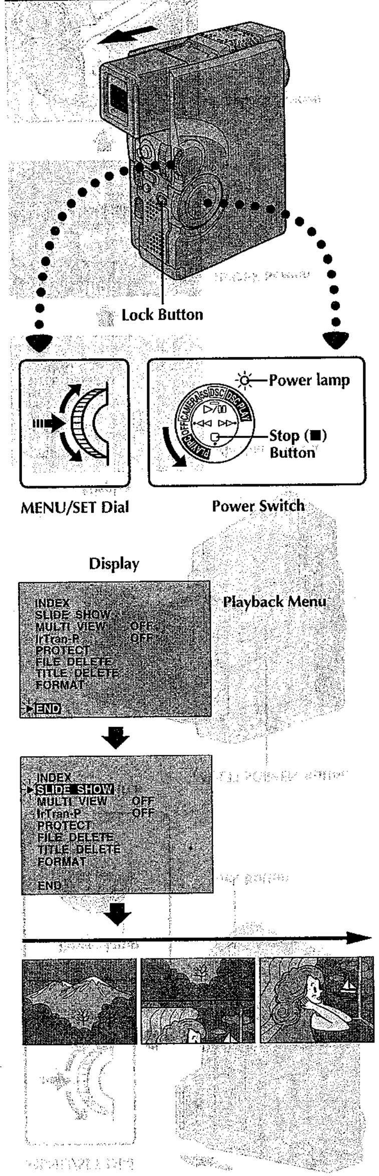
Press ■.

NOTE:

Even if you shoot a new image after playing back a low-numbered one, this will not overwrite an existing image, because new images are automatically stored after the last-recorded one.

---

* Not displayed when "INDICATION" is set to "OFF" in the Date/Time Menu (☞ pg. 38) or Video Playback Menu (☞ pg. 55).


Lock Button
Power lamp
Stop (■) Button
MENU/SET Dial
Power Switch
Display
Playback Menu
INDEX
SLIDE SHOW
MULTI VIEW OFF
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END

Slide Show

You can run through all the images stored in memory automatically in numerical order. Each still image wipes in over the last one from the bottom of the screen to the top.

1 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY ", while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

2 ACCESS PLAYBACK MENU

Press **MENU/SET**. The Playback Menu appears.

3 START SLIDE SHOW

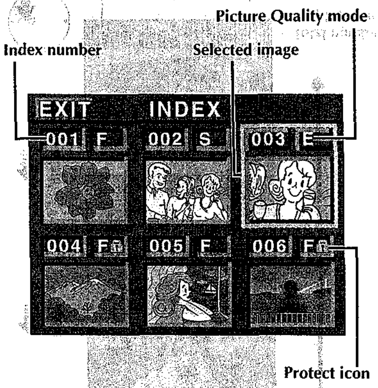
Move the highlight bar to "SLIDE SHOW" by rotating **MENU/SET**, and press it. The Slide Show starts.

4 STOP SLIDE SHOW

Press ■.

NOTE:

While the Slide Show is being performed, the image may be disturbed.


Picture Quality mode
Index number
Selected image
EXIT
INDEX
001 F
002 S
003 E
004 F
005 F
006 F
Protect icon

INDEX Screen

The images you shot can be displayed together with their index information. Convenient for checking images shot beforehand, the INDEX Screen also shows the Picture Quality mode as well as which images are protected against accidental erasure.

001: Index number

Index numbers are marked from 001. For example, when 10 images are stored (index number: 001 to 010), if three images with index numbers 002, 004 and 006 are deleted from memory, the remaining images are automatically moved up to fill any gaps in the numerical sequence. Therefore, the number of remaining images is 7, and the new index numbers range from 001 to 007.

F/S/E: Picture Quality mode

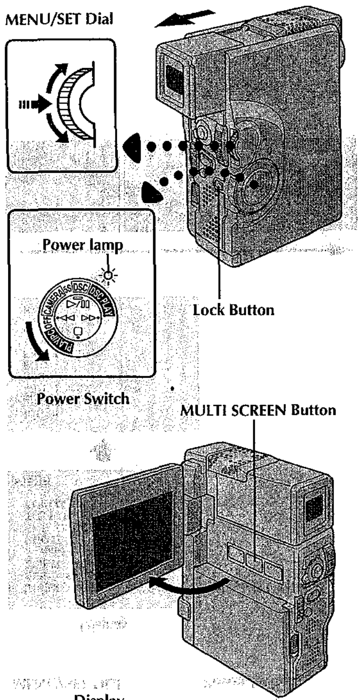
Displays the Picture Quality mode of the stored image. There are 3 modes available: FINE, STANDARD and ECONOMY (in order of quality).

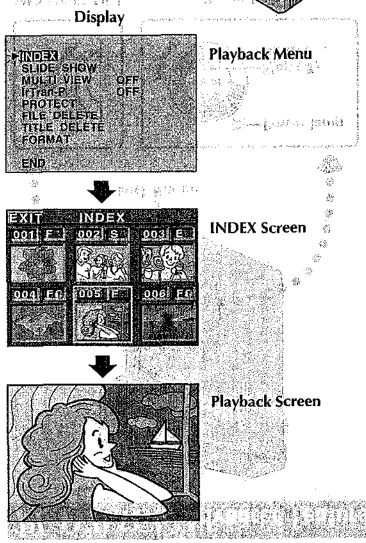
🔒: Protect icon

When an image is protected against its accidental erasure, a padlock mark appears next to the Picture Quality mode indicator, and that image cannot be deleted.

Selected Image

An image is framed in green when it is selected. Rotate **MENU/SET** to move the green frame to the desired image.


MENU/SET Dial
Power lamp
Lock Button
Power Switch
MULTI SCREEN Button


Display
INDEX
SLIDE SHOW
MULTI VIEW OFF
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END
Playback Menu
EXIT
INDEX
001 F
002 S
003 E
004 F
005 F
006 F
INDEX Screen
Playback Screen

Index Playback

You can view the images stored in memory six at a time. Use this mode when looking for an image you wish to view.

1 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.

2 ACCESS INDEX SCREEN

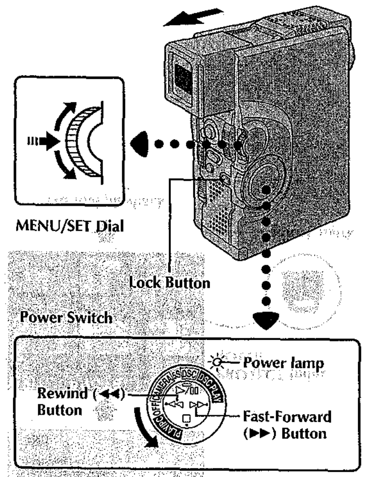
Press **MULTI SCREEN**. The INDEX Screen appears.

OR

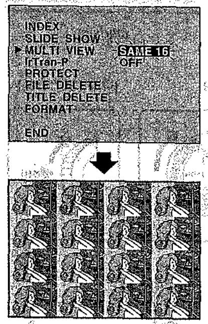
Select "INDEX" in the Playback Menu (To access the Playback Menu, press **MENU/SET**).

3 DISPLAY DESIRED IMAGE

Rotate **MENU/SET** to move the green frame to the desired image and press it. The image selected in the INDEX Screen is displayed.


MENU/SET Dial
Lock Button
Power Switch
Power lamp
Rewind (◀◀) Button
Fast-Forward (▶▶) Button

Display


INDEX
SLIDE SHOW
▶MULTI VIEW SAME 16
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END

Playback Menu

Multi-Image screen

NOTE:

If you wish to change the still images which make up the Multi-Image screen, go back to normal playback and change the "MULTI VIEW" setting in the Playback Menu.

Multi-Image Screen

There are 3 Multi-Image screens that can be created: 4-split screens composed of the same image, 16-split screens composed of the same image and 4-split screens composed of different, user-selected images.

1 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.
- To create a Multi-Image screen using the same image, select an image before performing step **2**.

2 ACCESS PLAYBACK MENU

Press **MENU/SET**. The Playback Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "MULTI VIEW" and press it. The selected parameter blinks.

NOTES:

- *By printing a Multi-Image screen to a printer that supports sticker sheets, you can create stickers of any image you like. For details, read your printer's instruction manual.*
- *To create a Multi-Image screen using the same image with a title/frame, first select the title/frame, referring to "Superimposing A Title/Frame" (☞ pg. 69), and then go to step **2** above.*
- *If a title/frame is superimposed over the playback picture before step **2** is performed above, it will be impossible to set "MULTI VIEW" to "SELECTED 4".*

TO CREATE A MULTI-IMAGE SCREEN USING THE SAME IMAGE

Before doing the following, perform steps **1** through **3** above.

4 SELECT MODE

Rotate **MENU/SET** until the "SAME 4" or "SAME 16" appears.

5 CREATE MULTI-IMAGE SCREEN

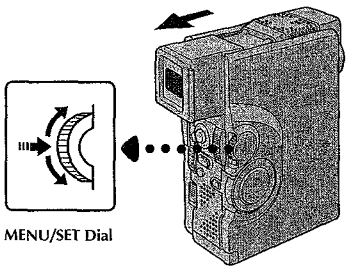
Press **MENU/SET**. A Multi-Image screen displaying 4 or 16 frames of the same image appears.

6 END MULTI-IMAGE SCREEN

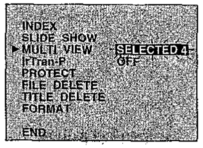
Set "MULTI VIEW" to "OFF" in the Playback Menu.

OR

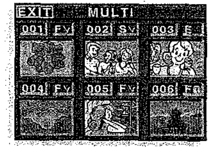
Press ▶▶ or ◀◀ to display another image.


MENU/SET Dial

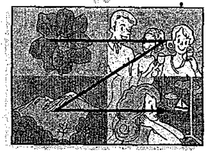
Display


INDEX
SLIDE SHOW
▶MULTI VIEW SELECTED 4
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END

Playback Menu


EXIT MULTI
001 FV
002 SV
003 F
004 FV
005 FV
006 FR

Multi-Image Index Screen



Multi-Image screen

TO CREATE A MULTI-IMAGE SCREEN USING SELECTED IMAGES

Before doing the following, perform steps **1** through **3** (☞ pg. 60).

4 SELECT MODE

Rotate **MENU/SET** until "SELECTED 4" appears and press it. The Multi-Image Index Screen appears.

5 SELECT IMAGES

Rotate **MENU/SET** to move the green frame to the desired image and press it. A check mark " ∨ " appears on the selected image. Repeat this procedure for all 4 images to be selected.

- To cancel the selection of an image, rotate **MENU/SET** to move the green frame to the desired image and press it. The check mark " ∨ " disappears.

6 CREATE MULTI-IMAGE SCREEN

Rotate **MENU/SET** upward to select "EXIT" and press it. The Multi-Image screen of the selected images appears.

- The selected images are displayed in numerical order from left to right and top to bottom.
- If you exit before selecting all 4 images, the Multi-Image screen is cancelled.

7 END MULTI-IMAGE SCREEN

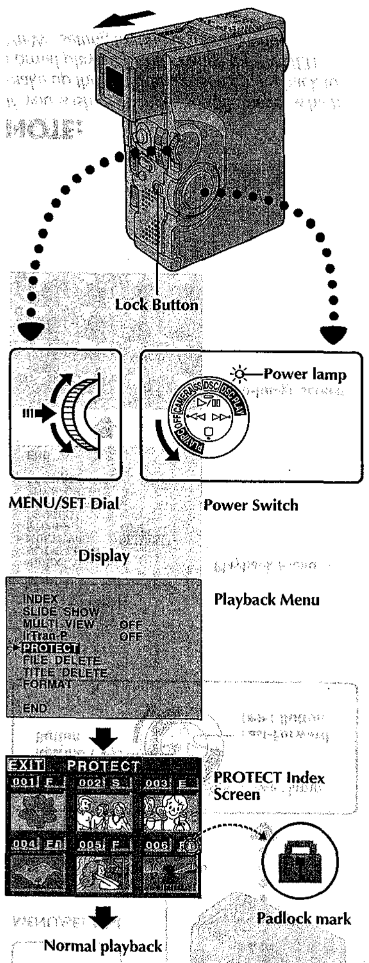
Set "MULTI VIEW" to "OFF" in the Playback Menu.

OR

Press ▶▶ or ◀◀ to display another image.

NOTE:

If you wish to change the still images which make up the Multi-Image screen, go back to normal playback and change the "MULTI VIEW" setting in the Playback Menu.


Lock Button
Power lamp
MENU/SET Dial
Power Switch
Display
INDEX
SLIDE SHOW
MULTI VIEW OFF
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END
Playback Menu
EXIT PROTECT
001 F 002 S 003 E
004 F 005 F 006 F
PROTECT Index Screen
Padlock mark
Normal playback

Protecting Images

The Protect mode helps prevent the accidental erasure of images. When a padlock mark is displayed next to the Picture Quality Mode indication, that image cannot be deleted.

1 SELECT OPERATION MODE

Set the Power Switch to "DSC PLAY" while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.

2 ACCESS PLAYBACK MENU

Press **MENU/SET**. The Playback Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "PROTECT" and press it. The PROTECT Index Screen appears.

TO PROTECT AN IMAGE

Before doing the following, perform steps **1** through **3** above.

4 SELECT IMAGE

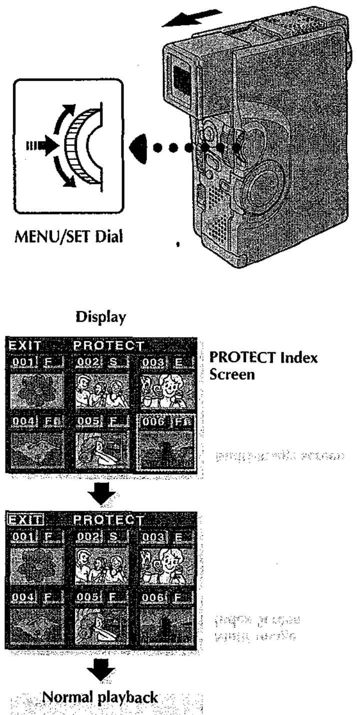
Rotate **MENU/SET** to move the green frame to the desired image and press it. A "🔒" padlock mark appears on the selected image.
Repeat this procedure for all images you do not wish to delete by accident.

5 END SELECTION

Rotate **MENU/SET** upward to select "EXIT" and press it. The normal playback screen appears.

NOTE:

When the memory is initialised or corrupted, even protected images are deleted. If you do not want to lose important images, we recommend you to transfer them to a PC and save them.


MENU/SET Dial
Display
EXIT PROTECT
001 F 002 S 003 E
004 F 005 F 006 F
PROTECT Index Screen
Normal playback

TO REMOVE PROTECTION

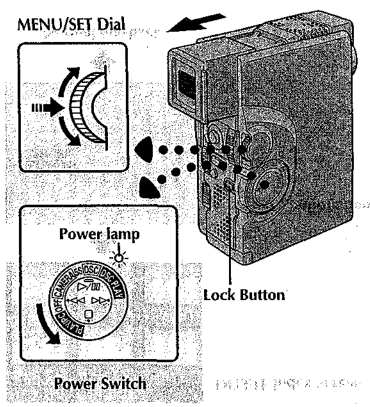
Before doing the following, perform steps **1** through **3** (☞ pg. 62).

4 SELECT IMAGES

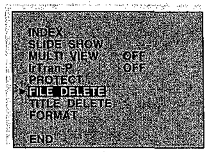
Rotate **MENU/SET** to move the green frame to the desired image and press it. The "🔒" padlock mark located above the image disappears and the image is no longer protected.
Repeat this procedure for all images from which you wish to remove protection.

5 END PROTECTION

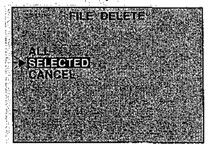
Rotate **MENU/SET** upward to select "EXIT" and press it. The normal playback screen appears.


MENU/SET Dial
Power lamp
Lock Button
Power Switch

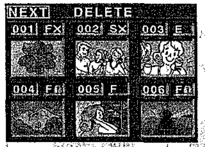
Display


INDEX
SLIDE SHOW
MULTI VIEW OFF
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END

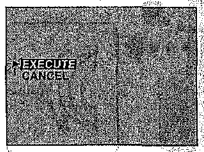
Playback Menu


FILE DELETE
ALL
SELECTED
CANCEL

FILE DELETE Screen


NEXT
DELETE
001 FX
002 SX
003 E
004 Fn
005 F
006 Fn

DELETE Index Screen


EXECUTE
CANCEL

Deletion Confirmation Screen

Normal playback

Deleting Images

Previously shot images can be deleted either one at a time or all at once.

1 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.

2 ACCESS PLAYBACK MENU

Press MENU/SET. The Playback Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "FILE DELETE" and press it. The FILE DELETE Screen appears.

TO SELECT AN IMAGE BY BROWSING IMAGES STORED IN MEMORY

Before doing the following, perform steps **1** through **3** above.

4 SELECT MODE

Rotate **MENU/SET** to select "SELECTED" and press it. The DELETE Index Screen appears.

5 SELECT IMAGE

Rotate **MENU/SET** to move the green frame to the desired image that you wish to delete and press it. An "✕" appears above the selected image.
Repeat this procedure for all images that you wish to delete.
To deselect an image, press **MENU/SET** again. The "✕" disappears.

6 END SELECTION

Rotate **MENU/SET** upward to select "NEXT" and press it. The Deletion Confirmation Screen appears.

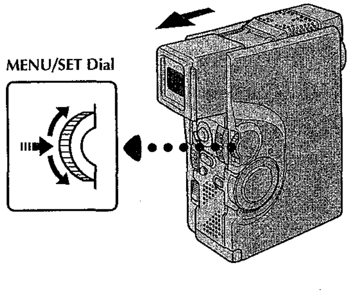
7 DELETE IMAGE

Rotate **MENU/SET** to select "EXECUTE" and press it. The selected images are deleted and the normal playback screen appears.

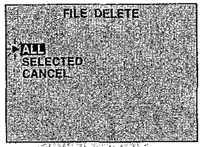
- If you wish to cancel deletion, rotate **MENU/SET** to select "CANCEL" and press it.

CAUTION:

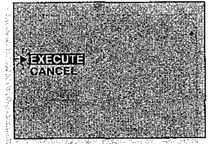
While deleting images, never remove the MultiMediaCard or disconnect power, as this may cause the memory to be corrupted. Also, be sure to use the AC Power Adapter/Charger, as a malfunction may occur if the battery become exhausted halfway through the operation.


MENU/SET Dial

Display


FILE DELETE
ALL
SELECTED
CANCEL

FILE DELETE Screen


EXECUTE
CANCEL

Deletion Confirmation Screen

Normal playback

TO DELETE ALL IMAGES

Before doing the following, perform steps **1** through **3** (☞ pg. 64).

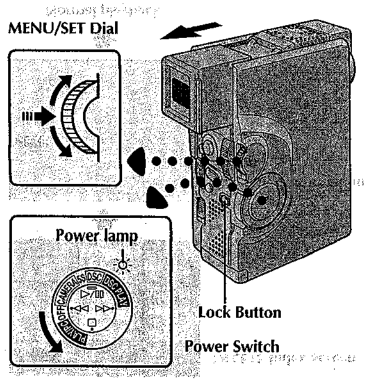
4 SELECT MODE

Rotate **MENU/SET** to select "ALL" and press it. The Deletion Confirmation Screen appears.

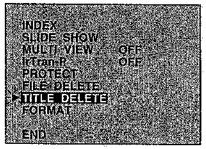
5 DELETE IMAGES

Rotate **MENU/SET** to select "EXECUTE" and press it. All the images are deleted.

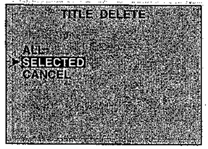
- If you wish to cancel deletion, rotate **MENU/SET** to select "CANCEL" and press it.



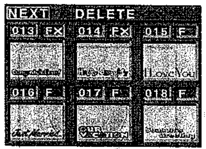
Display



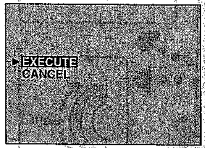
Playback Menu



TITLE DELETE Screen



DELETE Index Screen



Deletion Confirmation Screen

Normal playback

Deleting Titles/Frames

A title/frame created on a PC can be transferred to a MultiMediaCard using the provided software. Titles/frames that have been transferred to a MultiMediaCard can be deleted when they are no longer needed.
There are 2 ways of deleting previously created titles/frames: by browsing through titles/frames individually or by deleting them all at once.

1 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

- A stored image is displayed.

2 ACCESS PLAYBACK MENU

Press **MENU/SET**. The Playback Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "TITLE DELETE" and press it. The TITLE DELETE Screen appears.

NOTES:

- *If titles/frames created on a PC have not been transferred to a MultiMediaCard, it is not possible to delete them using these steps.*
- *The titles/frames in the camcorder's memory cannot be deleted.*

TO SELECT A TITLE/FRAME BY BROWSING TITLES/FRAMES STORED IN MEMORY

Before doing the following, perform steps **1** through **3** above.

4 SELECT MODE

Rotate **MENU/SET** to select "SELECTED" and press it. The DELETE Index Screen appears.

5 SELECT TITLE/FRAME

Rotate **MENU/SET** to move the green frame to the desired title/frame that you wish to delete and press it. An "✕" appears above the selected title/frame.
Repeat this procedure for all titles/frames that you wish to delete.
To deselect a title/frame, press **MENU/SET** again. The "✕" disappears.

6 END SELECTION

Rotate **MENU/SET** upward to select "NEXT" and press it. The Deletion Confirmation Screen appears.

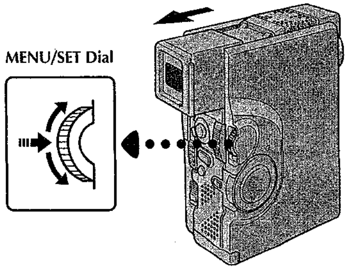
7 DELETE TITLE/FRAME

Rotate **MENU/SET** to select "EXECUTE" and press it. The selected titles/frames are deleted and the normal playback screen appears.

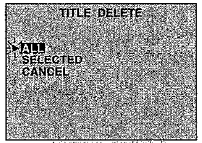
- If you wish to cancel deletion, rotate **MENU/SET** to select "CANCEL" and press it.

CAUTION:

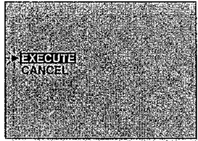
While deleting titles/frames, never remove the MultiMediaCard or disconnect power, as this may cause the memory to be corrupted. Also, be sure to use the AC Power Adapter/Charger, as a malfunction may occur if the battery become exhausted halfway through the operation.



Display



TITLE DELETE Screen



Deletion Confirmation Screen

Normal playback

TO DELETE ALL TITLES/FRAMES

Before doing the following, perform steps **1** through **3** (☞ pg. 66).

4 SELECT MODE

Rotate **MENU/SET** to select "ALL" and press it. The Deletion Confirmation Screen appears.

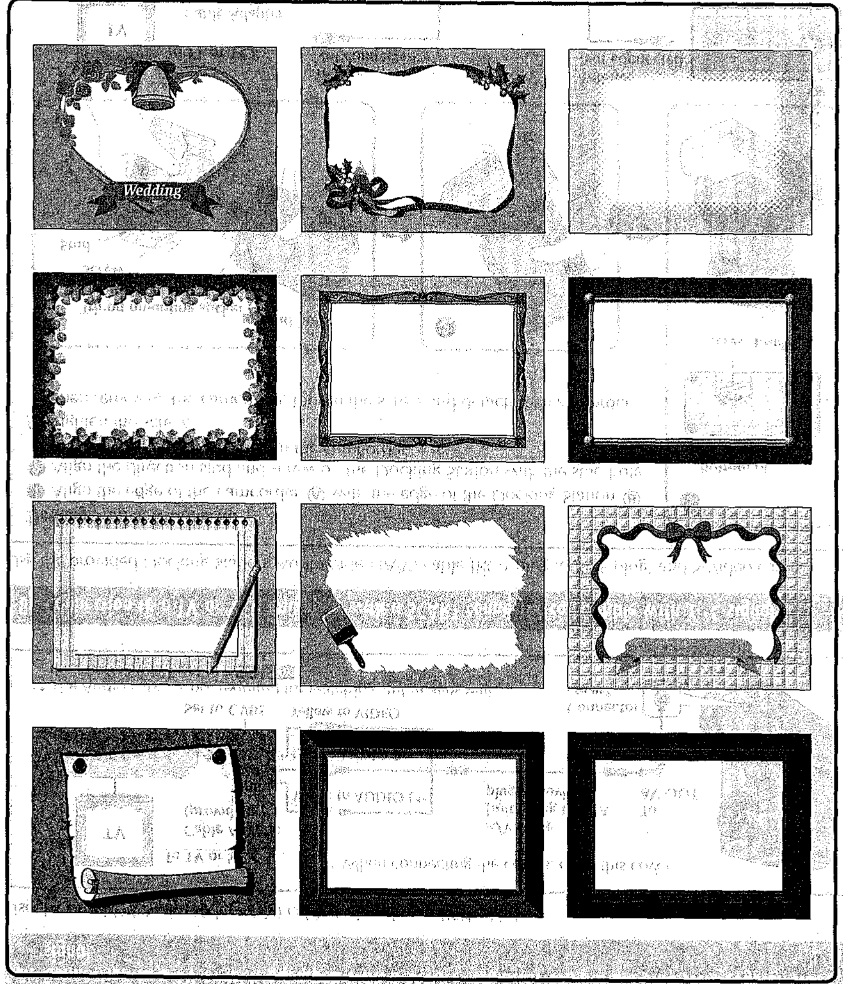
5 DELETE TITLE/FRAME

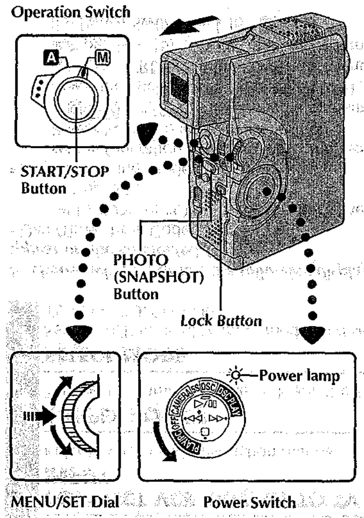
Rotate **MENU/SET** to select "EXECUTE" and press it. All the titles/frames are deleted.

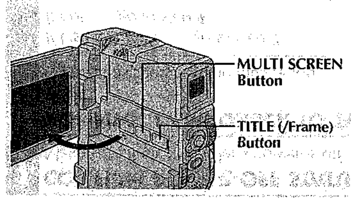
- If you wish to cancel deletion, rotate **MENU/SET** to select "CANCEL" and press it.

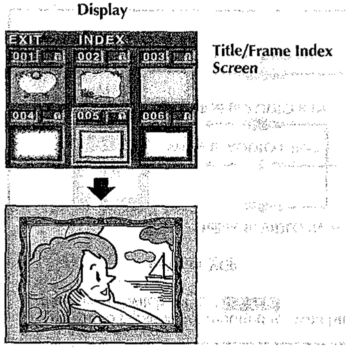
Types Of Titles/Frames

This camcorder has 12 preset titles/frames stored in its memory, as shown in the following illustration.









Superimposing A Title/Frame

A title/frame can be superimposed over the playback picture (image).

1 START PLAYBACK

Play back a tape or images in a MultiMediaCard.

2 SUPERIMPOSE TITLE/FRAME

Press **TITLE (/Frame)**. A title/frame is superimposed over the playback picture (image).

3 ACCESS TITLE/FRAME INDEX SCREEN

Press **MULTI SCREEN**. The Title/Frame Index Screen appears.

4 SELECT DESIRED TITLE/FRAME

Rotate **MENU/SET** to move the green frame to the desired title/frame and press it. The selected title/frame is superimposed over the playback picture (image).

5 MAKE TITLE/FRAME DISAPPEAR

Press **TITLE (/Frame)**. The selected title/frame disappears.

NOTES:

- *A title/frame created on a PC can be transferred to a MultiMediaCard using the provided software. Transferred titles/frames are displayed from title/frame index number 013, and they can be used together with the titles/frames in the camcorder's memory. For details on creating/transferring titles/frames, refer to the software instructions.*
- *If Snapshot recording/playback is performed with a title/frame, the images will be recorded/played back in the FULL mode regardless of the selected Snapshot mode.*
- *Depending on the images you record or play back, the title/frame outline may become grainy or vague.*
- *During title/frame display, it is not possible to change the Snapshot mode.*

To Record An Image With A Title/Frame . . .

.... You can also record an image with a title/frame by performing the following procedure.

1. Set the Operation Switch to "**A**" or "**M**". Then, set the Power Switch to "CAMERA", "5S" or "DSC" while pressing down the Lock Button.
2. Press **TITLE (/Frame)** to superimpose a title/frame on an image.
3. Press **MULTI SCREEN** to display the Title/Frame Index Screen.
4. Rotate **MENU/SET** to move the green frame to the desired title/frame and press it. The selected title/frame is superimposed over the image.
5. Press **START/STOP** or **PHOTO (SNAPSHOT)** to start recording. The image is recorded with the selected title/frame.
6. Press **TITLE (/Frame)** to make the title/frame disappear.

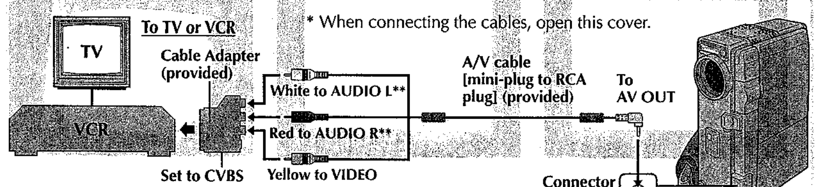
NOTES:

- *During recording, it is not possible to change the title/frame, as the Title/Frame Index Screen does not appear if MULTI SCREEN is pressed.*
- *The titles/frames displayed in the Title/Frame Index Screen may be jittery.*

These are some basic types of connections. When making the connections, refer also to your VCR and TV instruction manuals.

A. Connection to a TV or VCR equipped with a SCART connector compatible only with regular video signal

Use the provided Audio/Video (A/V) cable [mini-plug to RCA plug].


TV
VCR
To TV or VCR
Cable Adapter (provided)
White to AUDIO L**
Red to AUDIO R**
Set to CVBS
Yellow to VIDEO
A/V cable [mini-plug to RCA plug] (provided)
To AV OUT
Connector cover*

* When connecting the cables, open this cover.

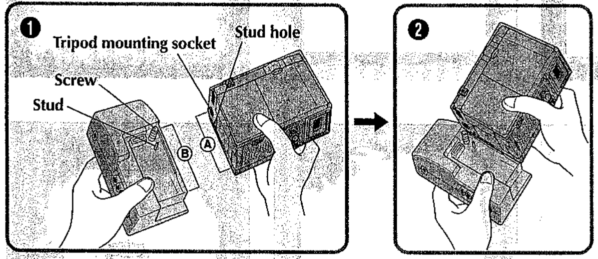
** The Audio cable is not required for watching still images with the Power Switch set to " DSC PLAY ".

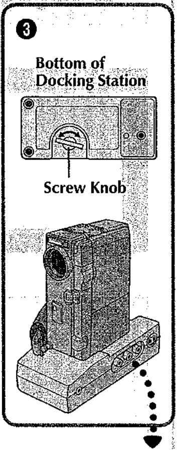
B. Connection to a TV or VCR equipped with a SCART connector compatible with Y/C signal

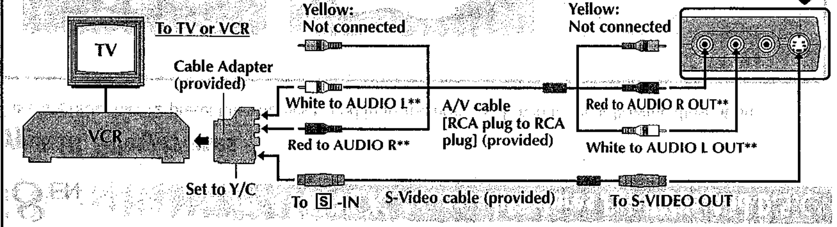
Use the provided Docking Station, Audio/Video (A/V) cable [RCA plug to RCA plug] and S-Video cable.

Docking Station Attachment

❶ Align the edge of the camcorder Ⓐ with the edge of the Docking Station Ⓑ.
❷ Align the direction stud and screw on the Docking Station with the stud hole and tripod mounting socket on the camcorder.
❸ Tighten the screw.
- When removing the camcorder, loosen the screw and detach the camcorder.


❶
Tripod mounting socket
Stud hole
Screw
Stud
Ⓑ
Ⓐ
❷


❸
Bottom of Docking Station
Screw Knob

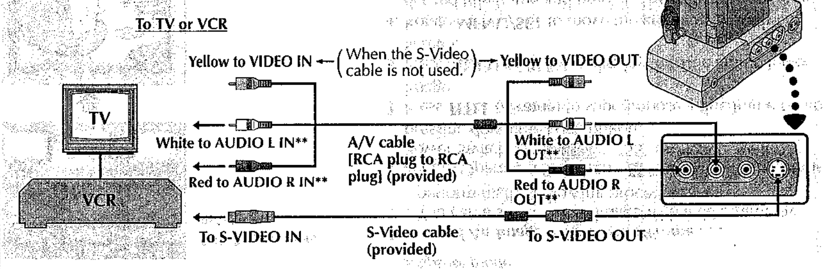

TV
VCR
To TV or VCR
Cable Adapter (provided)
Yellow: Not connected
White to AUDIO L**
Red to AUDIO R**
A/V cable [RCA plug to RCA plug] (provided)
Yellow: Not connected
Red to AUDIO R OUT**
White to AUDIO L OUT**
Set to Y/C
To S -IN
S-Video cable (provided)
To S-VIDEO OUT

** The Audio cable is not required for watching still images with the Power Switch set to " DSC PLAY ".

C. Connection to a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors

Use the provided Docking Station, Audio/Video (A/V) cable [RCA plug to RCA plug] and S-Video cable.

** The Audio cable is not required for watching still images with the Power Switch set to " DSC PLAY ".


To TV or VCR
TV
VCR
Yellow to VIDEO IN ← (When the S-Video cable is not used.) → Yellow to VIDEO OUT
White to AUDIO L IN**
Red to AUDIO R IN**
A/V cable [RCA plug to RCA plug] (provided)
White to AUDIO L OUT**
Red to AUDIO R OUT**
To S-VIDEO IN
S-Video cable (provided)
To S-VIDEO OUT

1 CONFIRM POWER-OFF STATUS

Make sure the camcorder's power is off.

2 CONNECT CAMCORDER TO TV OR VCR

Connect as shown in the illustration.

If Using A VCR . . . go to step 3.
If not . . . go to step 4.

3 CONNECT VCR OUTPUT TO TV INPUT

Refer to your VCR's instruction manual.

4 SUPPLY POWER

Turn on the camcorder, the VCR and the TV.

5 SELECT MODE

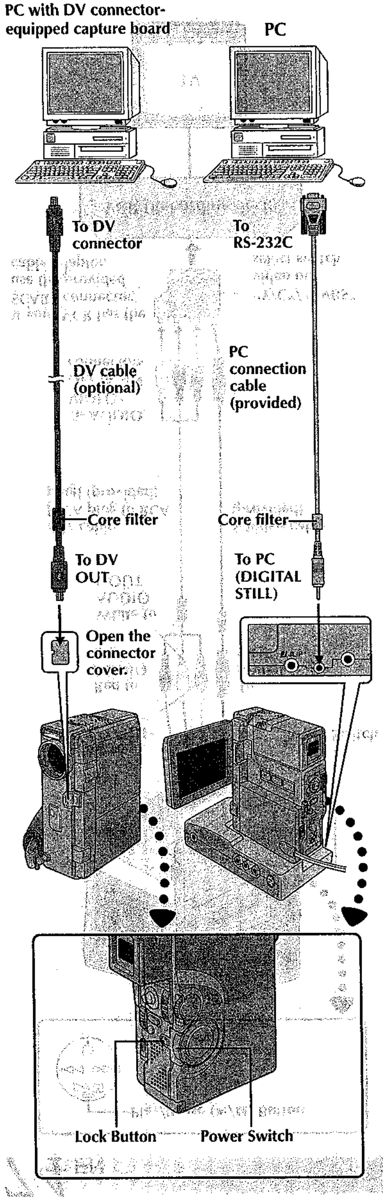
Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

To choose whether or not the following displays appear on the connected TV . . .

- Date/Time, Time Code
  .... set to "ON" or "OFF" in the Playback Menu (☞ pg. 54).
- Playback Sound Mode Display
  .... set the Operation Switch to " M ", then set the Power Switch to the camera position (" CAMERA ", "5S" or " DSC ") while pressing down the Lock Button. Press **MENU/SET** and set "ON SCREEN" in the Date/Time Menu (☞ pg. 34 – 38) to "ON" or "OFF". Then, set the Power Switch back to " PLAY/PC ".

NOTES:

- ***It is recommended to use the AC Power Adapter/Charger as the power supply instead of the battery pack (☞ pg. 9).***
- *Never connect any other Audio/Video cable than the provided Audio/Video cable (mini-plug to RCA plug) to the camcorder's AV OUT connector.*
- *When using the cables (except Audio/Video cable with mini-plug to RCA plug), make sure you connect the end of the cable with the core filter to the camcorder. The core filter reduces interference.*
- *To monitor the picture and sound from the camcorder without inserting a tape, set the camcorder's Power Switch to " CAMERA ", "5S" or " DSC ", then set your TV to the appropriate input mode.*
- *Make sure you adjust the TV sound volume to its minimum level to avoid a sudden burst of sound when the camcorder is turned on.*
- *If you have a TV or speakers that are not specially shielded, do not place the speakers adjacent to the TV as interference will occur in the camcorder playback picture.*
- *To keep the camcorder's display from appearing on the TV screen during playback, set "INDICATION" to "OFF" in the Playback Menu (☞ pg. 54) and press **DISPLAY** on the remote control.*
- *While the Audio/Video cable is connected to the AV OUT connector, sound cannot be heard from the speaker.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C : When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS : When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.


PC with DV connector-equipped capture board
PC
To DV connector
To RS-232C
DV cable (optional)
PC connection cable (provided)
Core filter
Core filter
To DV OUT
To PC (DIGITAL STILL)
Open the connector cover.
Lock Button
Power Switch

Connection To A Personal Computer

This camcorder can transfer still images to a personal computer by using the provided software when connected as shown in the illustration. It is also possible to transfer still images to a personal computer with a DV connector-equipped capture board installed.

1 CONFIRM POWER-OFF STATUS

Make sure the camcorder and PC are turned off.

2 CONNECT TO PC

Connect the camcorder or Docking Station to your PC using the appropriate cable as shown in the illustration.

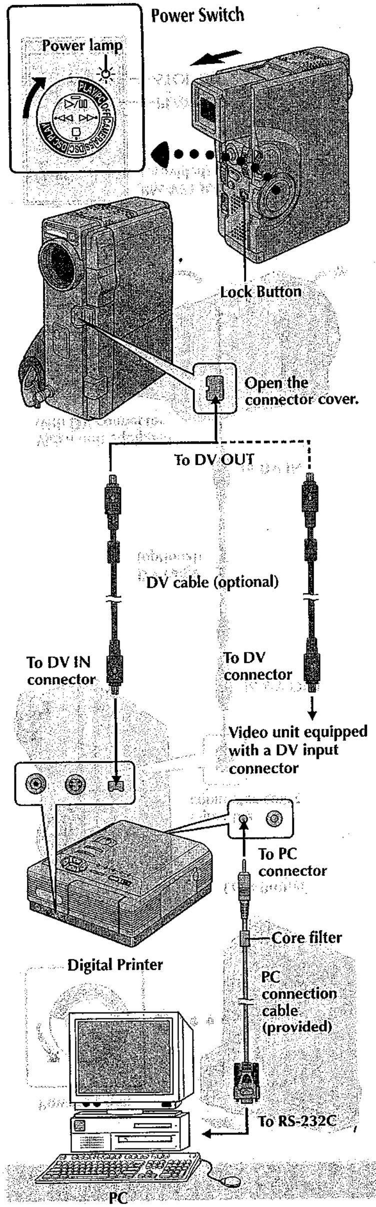
- To attach the camcorder to Docking Station, refer to "Docking Station Attachment" on pg. 70.

3 TURN ON POWER

Turn the camcorder's Power Switch to "PLAY/PC" while pressing down the Lock Button and turn on the PC.

NOTES:

- ***It is recommended to use the AC Power Adapter/Charger as the power supply instead of the battery pack (☞ pg. 9).***
- ***Never connect the PC connection cable and the DV cable simultaneously to the camcorder. Connect only the cable you wish to use to the camcorder.***
- *The date/time information cannot be captured into PC.*
- *Also refer to the instruction manuals of the provided Software and the DV connector-equipped capture board.*
- *Be sure to use a DV cable with the core filter.*


Power Switch
Power lamp
Lock Button
Open the connector cover.
To DV OUT
DV cable (optional)
To DV IN connector
To DV connector
Video unit equipped with a DV input connector
To PC connector
Core filter
Digital Printer
PC connection cable (provided)
To RS-232C
PC

Connection To A Video Unit Equipped With A DV Connector

Connection to the Digital Printer GV-DT3 (optional) allows you to print out the images or to transfer the captured image from the Digital Printer to a personal computer. It is also possible to copy recorded scenes from the camcorder onto another video unit equipped with a DV connector. This function is called Digital Dubbing (☞ pg. 75), which offers virtually no image or sound deterioration.

1 CONFIRM POWER-OFF STATUS

Make sure all the units are turned off.

2 CONNECT CAMCORDER TO PRINTER OR VIDEO UNIT EQUIPPED WITH DV INPUT CONNECTOR

Make connections to the device you want to connect to using the DV cable, as shown in the illustration.

3 CONNECT PRINTER TO PC (IF NECESSARY)

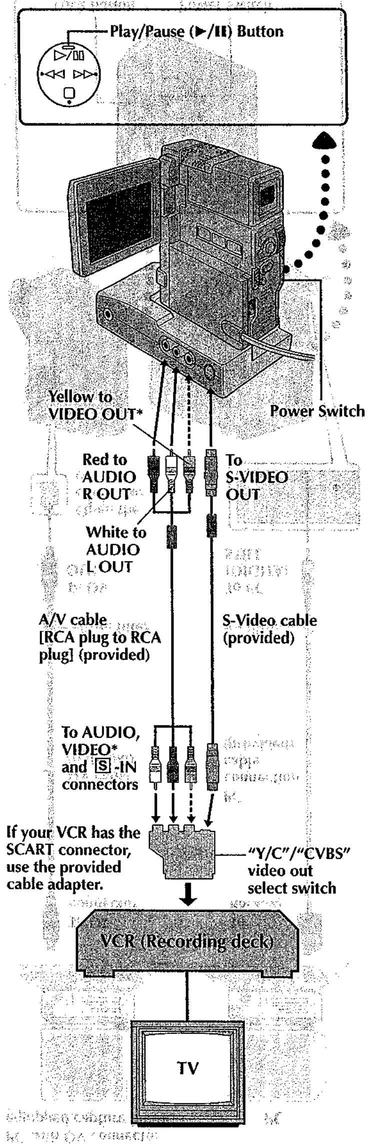
Connect the PC connection cable (provided) to the printer's PC connector and the PC's RS-232C connector.

4 TURN ON POWER

Turn the camcorder's Power Switch to "PLAY/PC" while pressing down the Lock Button and turn on the other units.

NOTES:

- ***It is recommended to use the AC Power Adapter/Charger as the power supply instead of the battery pack (☞ pg. 9).***
- *When using the camcorder for dubbing, be sure to use it as a player. The camcorder's DV connector is only for output.*
- *If Still Playback, Slow-Motion Playback, Fast-Forward or Rewind is attempted with the camcorder connected to a video unit via the DV connector, the image will take on an effect similar to a coloured mosaic pattern or it will become black.*
- *Also refer to the instruction manuals of the connected units.*
- *Be sure to use a DV cable with the core filter.*


Play/Pause (►/II) Button
Yellow to VIDEO OUT*
Power Switch
Red to AUDIO R OUT
To S-VIDEO OUT
White to AUDIO L OUT
A/V cable [RCA plug to RCA plug] (provided)
S-Video cable (provided)
To AUDIO, VIDEO* and S-IN connectors
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
VCR (Recording deck)
TV

*Connect when the S-Video cable is not used.

Dubbing Images/Sounds Recorded On A Tape To Another Tape

1 CONNECT EQUIPMENT

Following the illustration at left, connect the camcorder and the VCR. Also refer to pg. 70 and 71.

2 PREPARE FOR DUBBING

Set the camcorder's Power Switch to "PLAY/PC", turn on the VCR's power, and insert the appropriate cassettes in the camcorder and the VCR.

3 SELECT VCR MODE

Engage the VCR's AUX and Record-Pause modes.

4 FIND EDIT-IN POINT

Engage the camcorder's Play mode to find a spot just before the edit-in point. Once it is reached, press ►/II on the camcorder.

5 START EDITING

Press ►/II on the camcorder and engage the VCR's Record mode.

6 STOP EDITING TEMPORARILY

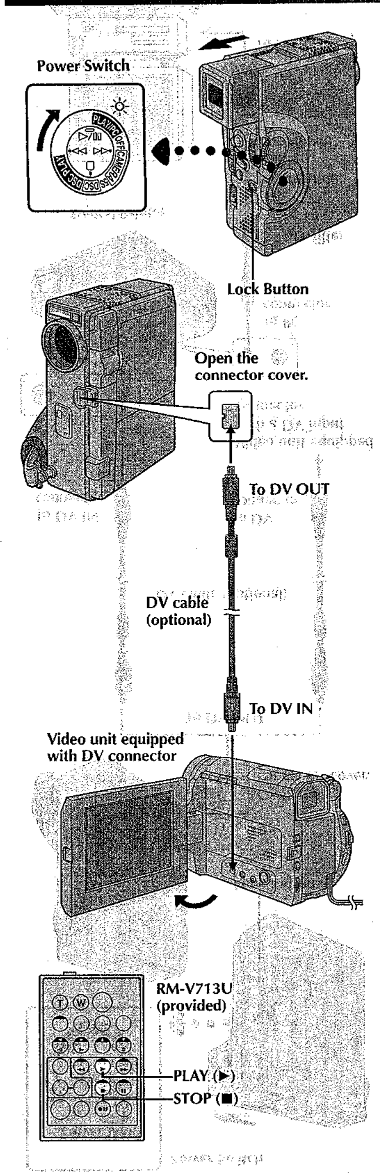
Engage the VCR's Record-Pause mode and press ►/II on the camcorder.

7 EDIT MORE SEGMENTS

Repeat steps **4** through **6** for additional editing, then stop the VCR and camcorder when finished.

NOTES:

- *You can use the AV OUT connector on the camcorder for connection.*
- *You can use Playback Zoom (☞ pg. 82) or Playback Special Effects (☞ pg. 83) in step* ***5****.*
- *Before you start dubbing, make sure that the indications do not appear on the connected TV. If they do appear during dubbing, they are being recorded onto the new tape.*
  To clear the Playback Sound Mode Display, press ***DISPLAY*** *on the RM-V713U remote control (provided).*
- *Select "DISPLAY" and "TIME CODE" from the Playback Menu (☞ pg. 54) to show or hide the Date/Time and the Time Code on the recording.*
- *To keep all the camcorder's indications from appearing on the VCR, set "INDICATION" to "OFF" in the Playback Menu (☞ pg. 54) and press* ***DISPLAY*** *on the remote control.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C : When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS : When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.


Power Switch
Lock Button
Open the connector cover.
To DV OUT
DV cable (optional)
To DV IN
Video unit equipped with DV connector
RM-V713U (provided)
PLAY (►)
STOP (■)

Digital Dubbing Of Recorded Images/ Sounds Between Tapes

It is also possible to copy recorded scenes from the camcorder onto other video unit equipped with a DV connector. Since a digital signal is sent, there is little if any image or sound deterioration.

1 CONFIRM POWER-OFF STATUS

Make sure the camcorder's power is off.

2 MAKE CONNECTIONS

Connect the camcorder to your video unit equipped with a DV connector using the DV cable (optional) as shown in the illustration.

3 START PLAYBACK

Press ► to play back the source tape.

4 START RECORDING

While watching the playback on the monitor, engage the DV connector-equipped video unit's record mode from the spot on the source tape you want to begin recording.

NOTES:

- ***It is recommended to use the AC Power Adapter/ Charger as the power supply instead of the battery pack (☞ pg. 9).***
- *When using the camcorder for dubbing, be sure to use it as a player. The camcorder's DV connector is only for output.*
- *If a blank portion or disturbed image is played back on the player during dubbing, the dubbing may stop so that an unusual image is not dubbed.*
- *Even though the DV cable is connected correctly, sometimes the image may not appear in step* ***3****. If the above occurs, turn off power and make connections again.*
- *If "Playback Zoom" (☞ pg. 82), "Playback Special Effects" (☞ pg. 83), "Superimposing A Title/Frame" (☞ pg. 69) or "Snapshot" is attempted during playback, only the original playback image recorded on the tape is output from the DV OUT connector.*
- *Be sure to use a DV cable with the core filter.*

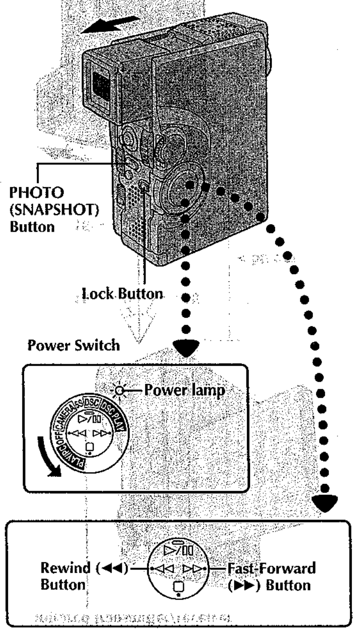
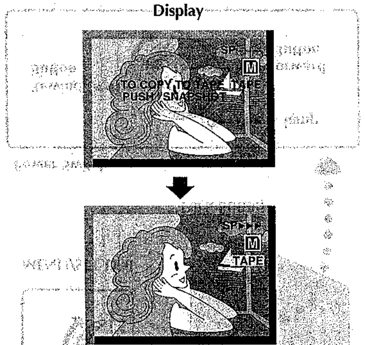


PHOTO (SNAPSHOT) Button
Lock Button
Power Switch
Power lamp
Rewind (◀◀) Button
Fast-Forward (▶▶) Button


Display
SP
M
TO COPY TO TAPE PUSH SNAPSHOT
TAPE
SP ▶
M
TAPE

Dubbing Images Stored In A MultiMediaCard To A Tape

Images can be dubbed from a MultiMediaCard to a tape.

1 LOAD CASSETTE AND MULTIMEDIACARD

2 SELECT OPERATION MODE

Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

3 SELECT IMAGE TO BE DUBBED

Perform Index Playback (☞ pg. 59), Auto Playback (☞ pg. 56) or press ◀◀ or ▶▶ to select the image you wish.

4 START DUBBING

Press **PHOTO (SNAPSHOT)**. The message "TO COPY TO TAPE PUSH SNAPSHOT" is displayed for approx. 5 seconds. While the message is displayed, press **PHOTO (SNAPSHOT)** again and the selected image is recorded on the tape for approx. 5 seconds.

- The "SP" or "LP", TAPE and tape running indicators disappear when dubbing is complete.

NOTE:

*If **PHOTO (SNAPSHOT)** is pressed in step **4** when the tape's erase protection switch is set to "SAVE", the message "COPYING FAILED" is displayed.*

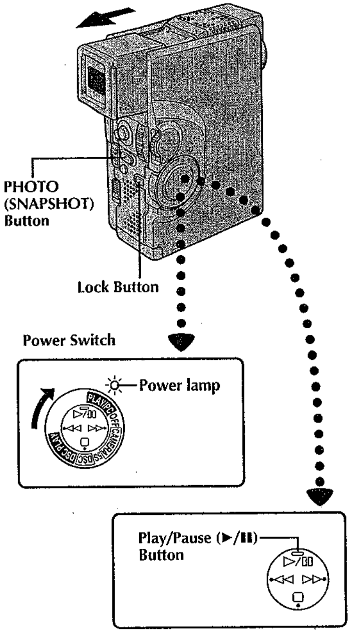
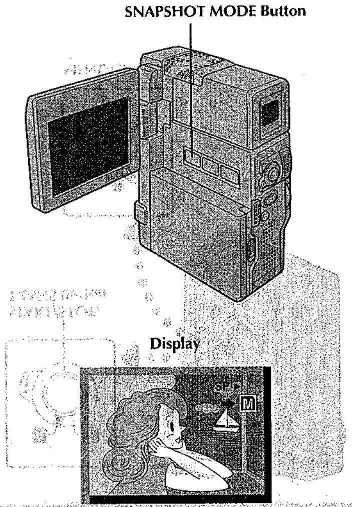


PHOTO (SNAPSHOT) Button
Lock Button
Power Switch
Power lamp
Play/Pause (▶/❚❚) Button


SNAPSHOT MODE Button
Display
SP
M

Dubbing Images Recorded On A Tape To A MultiMediaCard

Images can be dubbed from a tape to a MultiMediaCard.

1 LOAD CASSETTE AND MULTIMEDIACARD

2 SELECT OPERATION MODE

Set the Power Switch to " PLAY/PC " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

3 SELECT IMAGE TO BE DUBBED

Press ▶/❚❚ to start playback. At the moment you find the image you wish to dub, press it again to engage Still Playback.

4 SELECT SNAPSHOT MODE

Press **SNAPSHOT MODE** to select the Snapshot mode to use for dubbing the image to the MultiMediaCard.

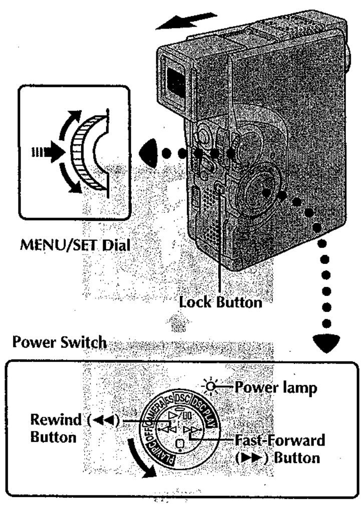
5 START COPYING

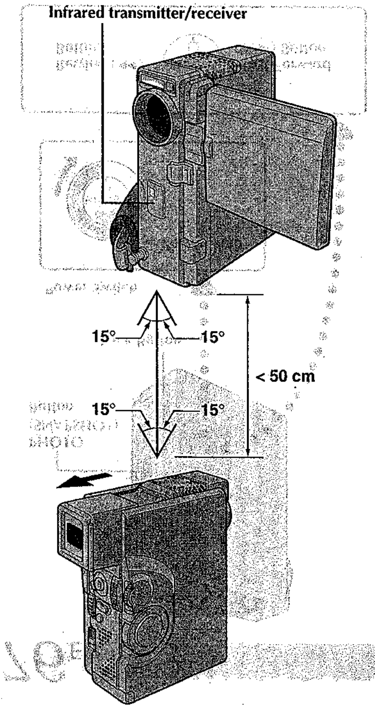
Press **PHOTO (SNAPSHOT)**. The image is stored in the MultiMediaCard.

- " ➜ " blinks during dubbing.

NOTES:

- *If **PHOTO (SNAPSHOT)** is pressed in step **5** when a MultiMediaCard is not loaded, the message "COPYING FAILED" is displayed.*
- *If an image recorded on the tape using the WIDE mode (☞ pg. 37) is dubbed to a MultiMediaCard, the WIDE mode identifying signal is not dubbed with it.*





Copying Images Using Infrared Communication [IrTran-P]

Images stored in a MultiMediaCard can be copied between this camcorder and another piece of equipment that supports IrDA (IrTran-P) infrared communication, regardless of its manufacturer.
The following procedure is described using two GR-DVX7 camcorders as an example. For use of other video units, refer to their respective instructions.

1 LOAD MULTIMEDIACARDS

[For both receiving and transmitting camcorders]
Insert MultiMediaCards into both receiving and transmitting camcorders.

2 SELECT OPERATION MODE

[For both receiving and transmitting camcorders]
Set the Power Switch to " DSC PLAY " while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

3 ACCESS PLAYBACK MENU

[For both receiving and transmitting camcorders]
Press **MENU/SET**. The Playback Menu appears.

4 SELECT FUNCTION

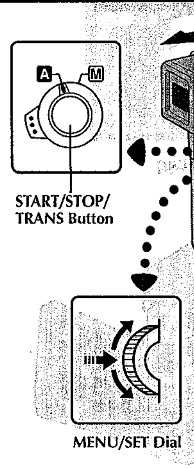
[For both receiving and transmitting camcorders]
Rotate **MENU/SET** to move the highlight bar to "IrTran-P" and press it. The selected parameter blinks.

5 SELECT IrTran-P MODE

[For transmitting camcorder]
Rotate **MENU/SET** until "TRANSMIT" appears and press it. The normal playback screen appears.

6 SELECT IMAGE TO BE COPIED

[For transmitting camcorder]
Perform Index Playback (☞ pg. 59), Auto Playback (☞ pg. 56) or press ◀◀ or ▶▶ to select the desired image.



7 POSITION CAMCORDERS

[For both receiving and transmitting camcorders]
Position the transmitting and receiving camcorders so that their infrared transmitter and receiver face each other.

- The distance between them should be less than 50 cm and the transmitter and receiver should be angled no more than 15° to each other.

8 TRANSMIT IMAGE

[For transmitting camcorder]
Press **START/STOP/TRANS**. Image transmission starts and the message "IN PROGRESS" is displayed.

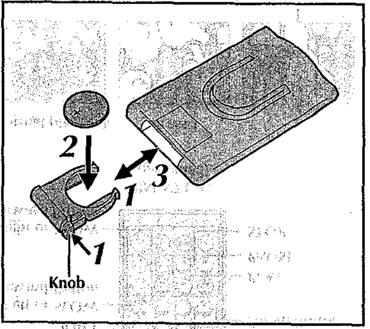
9 RECEIVE IMAGE

[For receiving camcorder]
Rotate **MENU/SET** until "RECEIVE" appears and press it. Image reception starts and the message "IN PROGRESS" is displayed. Reception is complete when the message disappears.

NOTES:

- *Be sure to supply power from the AC Power Adapter/Charger instead of the battery pack.*
- *[For transmitting camcorder]*
  - *Be sure to set "IrTran-P" back to "OFF" when the transmission is finished.*
  - *An image with a title/frame can also be transmitted.*
  - *If the message "COMMUNICATION FAILED" is displayed within approx. 60 seconds after **START/STOP/TRANS** is pressed, check the equipment orientation, power supplies, etc. and retry the transmission.*
  - *To abort transmission in the middle, press **START/STOP/TRANS**. The message "COMMUNICATION FAILED" is displayed.*
- *[For receiving camcorder]*
  - *If the message "COMMUNICATION FAILED" is displayed, check the equipment orientation, power supply, etc. and retry the transmission.*
  - *"IrTran-P" automatically returns to "OFF" when the reception is complete or it fails.*

USING THE REMOTE CONTROL UNIT



The Full-Function Remote Control Unit can operate this camcorder from a distance as well as the basic operations (Playback, Stop, Pause, Fast-Forward and Rewind) of your VCR. This remote control unit makes additional playback functions possible.

Installing The Battery

The remote control uses one lithium battery (CR2025).

1 PULL OUT BATTERY HOLDER

Pull out the battery holder while pressing the knob as shown.

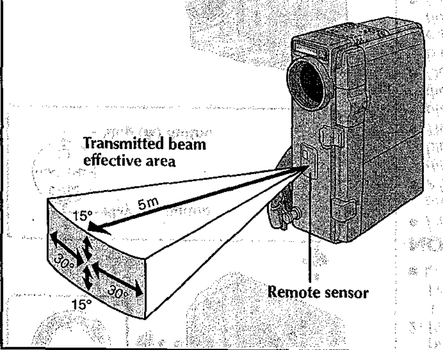
2 INSERT BATTERY IN HOLDER

Insert the battery in the holder, and be sure to have the "+" mark visible.

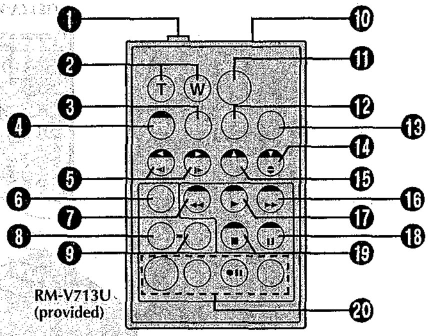
3 RE-INSERT HOLDER

Slide the holder back in until you hear a click.

- Read the caution concerning lithium batteries (☞ pg. 2).

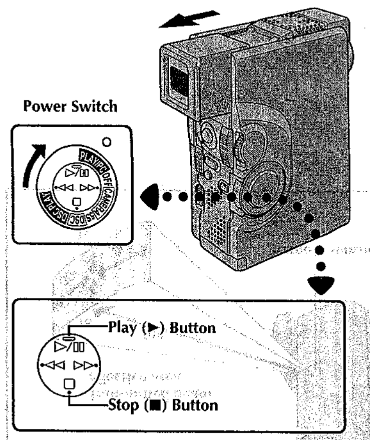


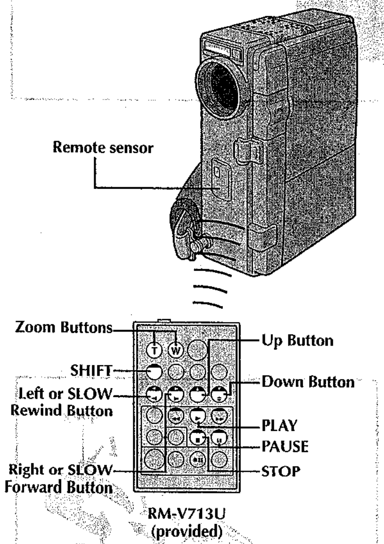
When using the remote control, be sure to point it at the remote sensor. The illustration shows the approximate transmitted beam effective area for indoor use.
The transmitted beam may not be effective or may cause incorrect operation outdoors or when the remote sensor is directly exposed to sunlight or powerful lighting.

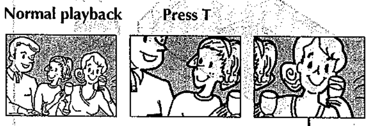


RM-V713U
(provided)

Buttons	Functions	
	With the camcorder's Power Switch set to the camera position ("CAMERA", "5S" or "DSC").	With the camcorder's Power Switch set to "PLAY/PC" or "DSC PLAY".
❶ PAUSE IN Connector	—	☞ pg. 85
❷ Zoom (T/W) Buttons	Zoom in/out (☞ pg. 24)	Zoom in/out (☞ pg. 82)
❸ DISPLAY Button	—	☞ pg. 74
❹ SHIFT Button	—	☞ pg. 82
❺ SLOW Rewind/Forward Buttons Left/Right Buttons	— —	☞ pg. 82 ☞ pg. 82
❻ FADE/WIPE Button	—	☞ pg. 85
❼ REW Button	—	• Rewind/Reverse Shuttle Search on a tape (☞ pg. 52, 53) • Displays previous image in a MultiMediaCard (☞ pg. 56)
❽ EFFECT Button	—	☞ pg. 83
❾ EFFECT ON/OFF Button	—	☞ pg. 83
❿ Infrared beam transmitting window	Transmits the beam signal.	
⓫ START/STOP Button	Functions same as **START/STOP** on the camcorder.	
⓬ AUDIO MONITOR Button	—	☞ pg. 55
⓭ MBR SET Button	—	☞ pg. 84
⓮ Down Button A.DUB Button	— —	☞ pg. 82 ☞ pg. 90
⓯ Up Button	—	☞ pg. 82
⓰ FF Button	—	• Forward/Forward Shuttle Search on a tape (☞ pg. 52, 53) • Displays next image in a MultiMediaCard (☞ pg. 56)
⓱ PLAY Button	—	• Starts Playback of a tape (☞ pg. 52) • Starts Auto Playback of a MultiMediaCard (☞ pg. 56)
⓲ PAUSE Button	—	Pauses the tape (☞ pg. 53)
⓳ STOP Button	—	• Stops the tape (☞ pg. 52) • Stops Auto Playback or Slide Show (☞ pg. 56, 57)
⓴ R.A.EDIT Buttons	—	☞ pg. 84 – 89






Normal playback
Press T
To move image, press ◓ (Right) while keeping SHIFT held down.

FEATURE: Slow-Motion Playback

PURPOSE:

To allow slow-speed search in either direction during video playback.

OPERATION:

1) To change from normal to Slow-Motion Playback, press **PAUSE (II)** at the point where you want to start playback in slow motion.

2) Press **SLOW** (◂I or I▸). After playing back for approx. 1 minute in Slow Rewind or approx. 2 minutes in Slow Forward, normal playback resumes.

■ To stop Slow-Motion Playback in progess, press **PLAY** (►).

NOTES:

- *During Slow-Motion Playback, due to digital image processing, the picture may take on a mosaic effect.*
- *After **SLOW** (◂I or I▸) is pressed, the still image may be displayed for a few seconds, then the screen may become blue back for a few seconds. This is not a malfunction.*
- *There may be a small margin between the slow-motion playback start point you chose and the start point at which the camcorder actually begins playback in slow motion.*
- *During Slow-Motion Playback, there will be disturbances in video and the picture may seem unstable, especially with steady images. This is not a malfunction.*
- *During Slow-Motion Playback, press **PAUSE** (II) to pause playback.*

FEATURE: Frame-By-Frame Playback

PURPOSE:

To allow frame-by-frame search during video playback.

OPERATION:

1) To change from normal to Frame-By-Frame Playback, press **PAUSE (II)** at the point where you want to start Frame-By-Frame Playback.

2) Press **PAUSE (II)** repeatedly. Each time it is pressed, the frame is played back.

FEATURE: Playback Zoom

PURPOSE:

To magnify the recorded image up to 10X at any time during video playback.

OPERATION:

1) Press **PLAY** (►) to find the scene of interest.

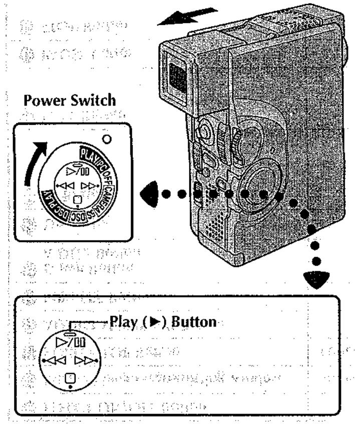
2) Press the Zoom Buttons (**T/W**) on the remote control. Make sure the remote control is pointed at the camcorder's remote sensor. Pressing **T** zooms in.

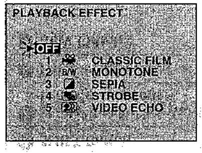
3) You can move the image on screen around to find a particular portion of the picture. While holding down **SHIFT**, press ◒ (**Left**), ◓ (**Right**), ◓ (**Up**) and ◒ (**Down**).

■ To end zoom, press and hold **W** until magnification returns to normal. Or, press **STOP** (■) and then press **PLAY** (►).

NOTES:

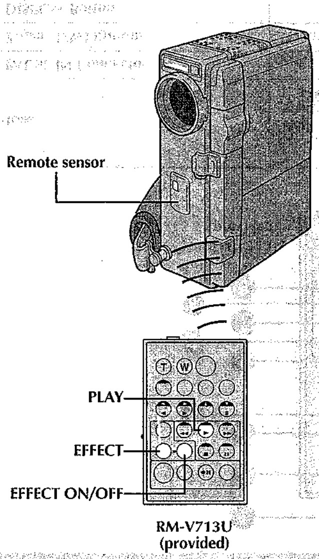
- *Zoom can also be used during slow-motion and still playback.*
- *During digital image processing, the quality of the image may suffer.*




PLAYBACK EFFECT

▶OFF
1 CLASSIC FILM
2 B/W MONOTONE
3 SEPIA
4 STROBE
5 VIDEO ECHO

PLAYBACK EFFECT Select Menu



FEATURE: Playback Special Effects

PURPOSE:

To allow you to add creative effects to the video playback image. You can use any one of the 5 effects.

OPERATION:

1) To start playback, press **PLAY** (►).

2) Point the remote control at the camcorder's remote sensor and press **EFFECT**. The PLAYBACK EFFECT Select Menu appears.

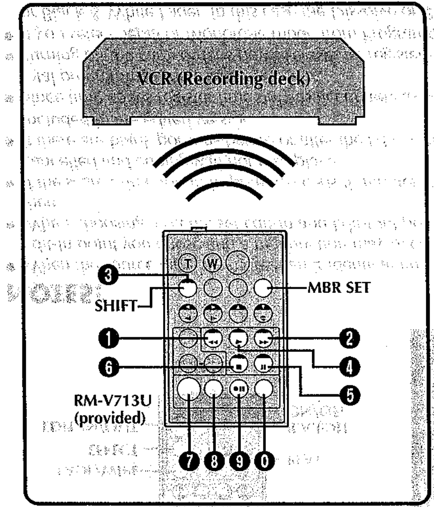
3) Move the highlight bar to the desired effect by pressing **EFFECT**. The selected function is activated and after 2 seconds the menu disappears.

■ To deactivate the selected effect, press **EFFECT ON/OFF** on the remote control. Pressing it again re-activates the selected effect.

■ To change the selected effect, repeat from step **2** of the above "OPERATION".

NOTES:

- *When some Playback Special Effects are used, the Multi-Analyser 4 and Multi-Analyser 9 Snapshot modes (☞ pg. 31) are not available.*
- *The effects that can be used during playback are Classic Film, Monotone, Sepia, Strobe and Video Echo. The effects work the same in playback as they did in recording. Refer to page 45 for more information.*



VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
AKAI	❻ ❷ ❻ ❹ ❼ ❼
BLAUPUNKT	❶ ❸
FERGUSON	❾ ❼ ❾ ❽ ❸ ❷
GRUNDIG	❶ ❹ ❸ ❹
HITACHI	❻ ❻ ❻ ❸
JVC A B C	❾ ❶ ❾ ❻ ❾ ❸
MITSUBISHI	❻ ❼ ❻ ❽
NEC	❸ ❼ ❸ ❽
PANASONIC	❶ ❸ ❶ ❼ ❶ ❶ ❾ ❹ ❶ ❽

VCR BRAND NAME	BUTTONS (A) (B)
PHILIPS	❶ ❾ ❾ ❺ ❶ ❶ ❾ ❹ ❾ ❶ ❾ ❻ ❶ ❷ ❸ ❸ ❼ ❷
SANYO	❸ ❻ ❸ ❺
SELECO, REX	❾ ❶ ❾ ❻
SHARP	❶ ❺ ❶ ⓿
SONY	❻ ❺ ❻ ⓿ ❸ ❾ ❸ ❶
THOMSON, TELEFUNKEN, SABA, NORDMENDE	❾ ❶ ❾ ❻ ❾ ❼ ❸ ❷
TOSHIBA	❻ ❾ ❻ ❶

Random Assemble Editing [R.A.Edit]

Create edited videos easily using your camcorder as the source player. You can select up to 8 "cuts" for automatic editing, in any order you like. R.A.Edit is more easily performed when the RM-V713U MBR (Multi-Brand Remote, ☞ pg. 81) is set to operate with your brand of VCR (see VCR CODE LIST), but can also be performed by operating the VCR manually.
Before operation, make sure the lithium battery is installed in the remote control RM-V713U (☞ pg. 80).

SET REMOTE/VCR CODE

1 SET REMOTE TO OPERATE VCR

Turn off the power to the VCR and point the remote towards the VCR's infrared sensor. Then, referring to the VCR CODE LIST on the left, press and hold **MBR SET**, and press button (A) and then (B).

- The code is automatically set once you release **MBR SET**, and the VCR's power comes on.

2 OPERATE VCR

Make sure the VCR's power is on. Then, while holding **SHIFT**, press the button on the remote for the desired function. The functions the remote can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY (you do not need to press **SHIFT** for this one).

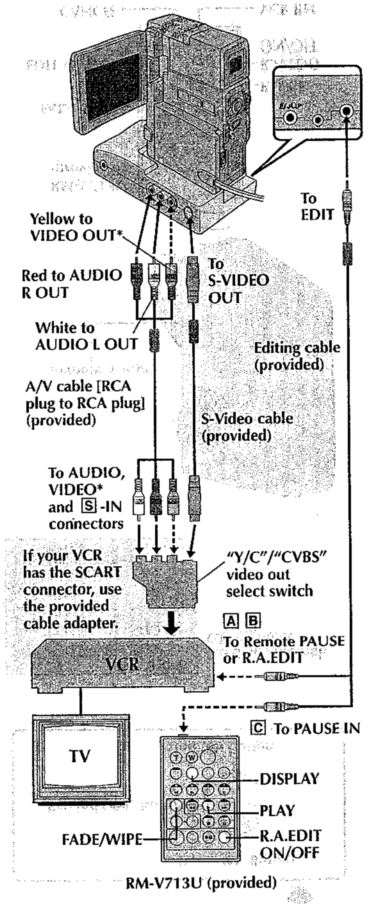
You are now ready to try Random Assemble Editing.

IMPORTANT

Although the MBR is compatible with JVC VCRs and those of many other makers, it may not work with yours or may offer limited functions.

NOTES:

- *If the VCR's power does not come on in step 1, try another code from the VCR CODE LIST.*
- *Some brands of VCR do not come on automatically. In this case, turn the power on manually and try step 2.*
- *If the remote control is not able to control the VCR, use the controls on the VCR.*
- *When the remote control's battery runs out, the VCR brand you have set will be erased.*
  In that case, replace the old battery with a new one to reset the VCR brand.


To EDIT
Yellow to VIDEO OUT*
Red to AUDIO R OUT
To S-VIDEO OUT
White to AUDIO L OUT
Editing cable (provided)
A/V cable [RCA plug to RCA plug] (provided)
S-Video cable (provided)
To AUDIO, VIDEO* and S -IN connectors
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
A B
To Remote PAUSE or R.A.EDIT
VCR
C To PAUSE IN
TV
DISPLAY
PLAY
FADE/WIPE
R.A.EDIT ON/OFF
RM-V713U (provided)

* Connect when the S-Video cable is not used.

MAKE CONNECTIONS

Also refer to pg. 70, 71 and 73.

1 CONNECT TO . . .

A JVC VCR EQUIPPED WITH REMOTE PAUSE TERMINAL
Connect the editing cable to the Remote PAUSE terminal.

B JVC VCR NOT EQUIPPED WITH REMOTE PAUSE TERMINAL BUT EQUIPPED WITH R.A.EDIT CONNECTOR
Connect the editing cable to the R.A.EDIT connector.

C VCR OTHER THAN TYPE A OR B
Connect the editing cable to the RM-V713U's PAUSE IN connector.

2 PREPARE CAMCORDER

Insert a recorded tape and set the Power Switch to "PLAY/PC" while pressing down the Lock Button.

3 PREPARE VCR

Turn the power on, insert a recordable tape and engage the AUX mode (refer to VCR's instructions).

SELECT SCENES

4 START SOURCE PLAYBACK

Press **PLAY** (▶) and then press **R.A.EDIT ON/OFF** on the remote control. Make sure to point the remote control at the camcorder's remote sensor.

- The Random Assemble Editing Menu appears.

5 EXECUTE FADE/WIPE IN (IF NECESSARY)

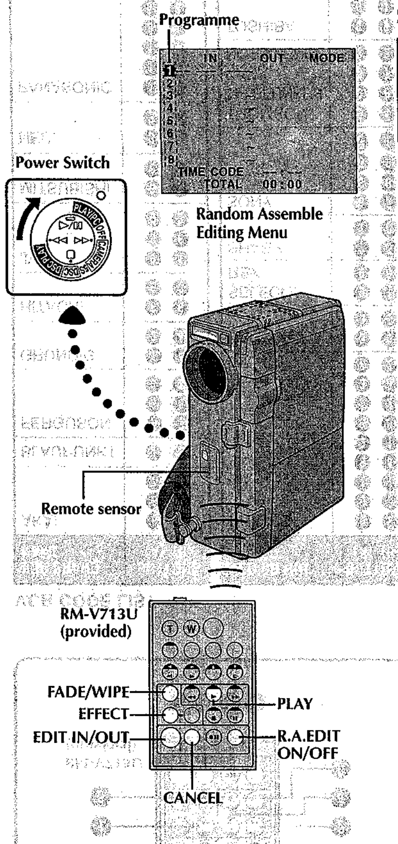
Press **FADE/WIPE** on the remote control.

- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- You cannot use a Picture Wipe/Dissolve at the beginning of Programme 1.

NOTES:

- *You can use the AV OUT connector on the camcorder for connection.*
- *Before Random Assemble Editing, make sure the indications do not appear on the TV monitor. If they appear during Random Assemble Editing, they will be recorded onto the new tape. To clear the Playback Sound Mode Display, press* ***DISPLAY*** *on the remote control. Select "DISPLAY" and "TIME CODE" from the Playback Menu (☞ pg. 54) to show or hide the Date/Time and the Time Code on the recording. To show or hide all indications except for the Random Assemble Editing Menu, set "INDICATION" to "OFF" in the Playback Menu (☞ pg. 54) and press* ***DISPLAY*** *on the remote control. When Random Assemble Editing starts, its indications disappear and are not recorded on the new tape.*
- *When editing on a VCR equipped with DV input connector, the DV cable can be connected instead of the S-Video cable and Audio/Video cable.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C: When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS: When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.

CONTINUED ON NEXT PAGE


Programme
IN OUT MODE
1
2
3
4
5
6
7
8
TIME CODE --:--
TOTAL 00:00
Random Assemble Editing Menu
Power Switch
PLAY PC
OFF
CAMERA
5S
DSC
DSC PLAY
Remote sensor
RM-V713U (provided)
FADE/WIPE
EFFECT
EDIT IN/OUT
PLAY
R.A.EDIT ON/OFF
CANCEL

SELECT SCENES (cont.)

6 SET EDIT-IN POINT

At the beginning of the scene, press **EDIT IN/OUT** on the remote control. The Edit-In position appears on the Random Assemble Editing Menu.

7 SET EDIT-OUT POINT

At the end of the scene, press **EDIT IN/OUT**. The Edit-Out position appears on the Random Assemble Editing Menu.

8 USE FADE/WIPE ON SCENE TRANSITION (IF NECESSARY)

Press **FADE/WIPE**.

- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- If you select a Fade/Wipe effect for an Edit-Out point, the effect is automatically applied to the following Edit-In point.
- You cannot use a Picture Wipe/Dissolve at the end of the last scene.
- When you use Fade/Wipe effects, that time is included in the total time (this does not apply to Picture Wipe/Dissolve).

9 USE PLAYBACK SPECIAL EFFECTS (IF NECESSARY, ☞ pg. 83)

Press **EFFECT**.

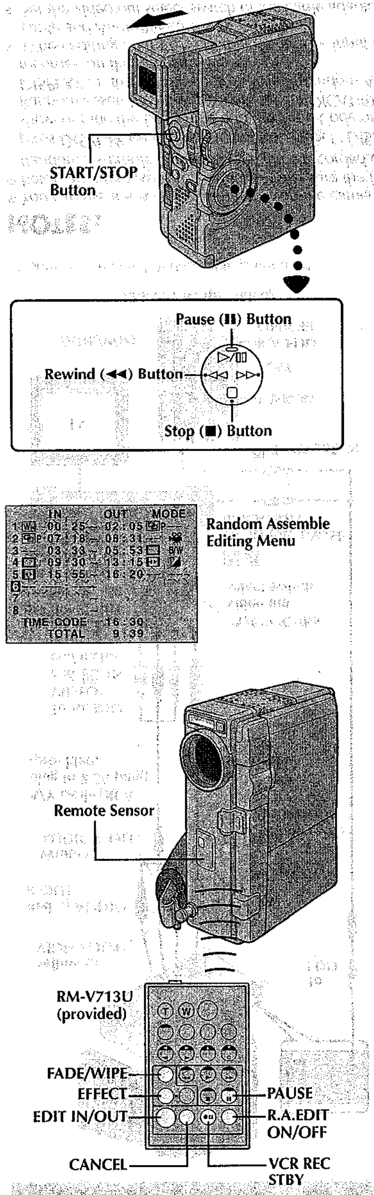
10 REGISTER ADDITIONAL SCENES

Repeat steps **6** through **9**.

- To change previously registered points, press **CANCEL** on the remote control. The registered points disappear, one at a time, from the most recently registered point.
- If you are not using Fade/Wipe or Programme AE with special effects, repeat steps **6** and **7** only.

NOTES:

- *When the source tape has more than 2 identical time codes (☞ pg. 25), the camcorder may not find the Edit-In point you chose and a malfunction may occur.*
- *When choosing a scene, set Edit-In and Edit-Out points so that there is a relatively large difference between them.*
- *If the search time for an in-point exceeds 5 minutes, the recording deck's Record-Standby mode will be cancelled and editing will not take place.*
- *If there are blank portions before or after the Edit-In and Edit-Out points, a blue-backed screen may be included in the edited version.*
- *Since time codes register time only as accurately as seconds, the time code total time may not match the total programme time exactly.*
- *Turning off the camcorder's power erases all registered Edit-In and Edit-Out points.*
- *If you select Sepia or Monotone mode from Programme AE with special effects, you cannot use the Dissolve or Black & White Fader. In this case the Dissolve or Black & White indicator begins blinking. Once the next Edit-In point is registered, the effect is turned off. To combine these effects, use Sepia or Monotone during recording, then use Dissolve or Black & White Fader during Random Assemble Editing.*
- *It is not possible to use Fade/Wipe effects and Programme AE with special effects during Random Assemble Editing using a DV cable.*


START/STOP Button
Pause (II) Button
Rewind (◀◀) Button
Stop (■) Button
IN OUT MODE
1 00:25 ~ 02:05
2 07:18 ~ 08:31
3 03:33 ~ 05:53 B/W
4 09:30 ~ 13:15
5 15:55 ~ 16:20
6
7
8
TIME CODE 16:30
TOTAL 9:39
Random Assemble Editing Menu
Remote Sensor
RM-V713U (provided)
FADE/WIPE
EFFECT
EDIT IN/OUT
CANCEL
PAUSE
R.A.EDIT ON/OFF
VCR REC STBY

AUTOMATIC EDITING TO VCR

11 PREPARE SOURCE TAPE

Rewind the tape in the camcorder to the beginning of the scene you want to edit and press **PAUSE (II)**.

12 ENGAGE VCR'S RECORD-PAUSE MODE

Point the remote control towards the VCR's remote sensor and press **VCR REC STBY (●II)**, or manually engage the VCR's Record-Pause mode.

13 START EDITING

Press **START/STOP** on the camcorder. Editing proceeds as programmed, right through to the end of the last registered scene.

- Pressing **START/STOP** on the remote control does not start editing.
- When dubbing is complete, the camcorder enters the Pause mode, and the recording deck enters its Record-Standby mode.
- If you do not register an Edit-Out point, the tape will be dubbed all the way to the end automatically.

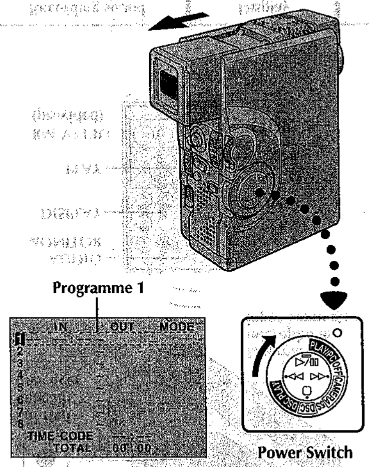
14 STOP EDITING

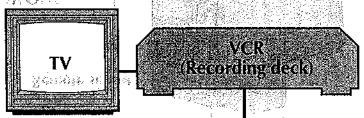
Engage the Stop modes for the camcorder and the VCR.

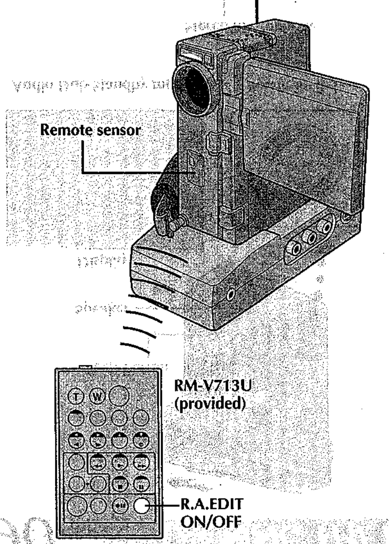
To make the R.A.Edit counter display disappear, press **R.A.EDIT ON/OFF** on the remote control.

NOTES:

- *Pressing **R.A.EDIT ON/OFF** on the remote control clears all settings registered during Random Assemble Editing.*
- *When the editing cable is connected to the Pause terminal during dubbing, make sure the remote control is pointed at the VCR's sensor, and that the path between the two is unobstructed.*
- *Random Assemble Editing may not function properly when using a tape including several duplicated Time Codes (☞ pg. 25).*


Programme 1
IN
OUT
MODE
1
2
3
4
5
6
7
8
TIME CODE
TOTAL 00:00
Power Switch
Random Assemble Editing Menu


TV
VCR
(Recording deck)


Remote sensor
RM-V713U
(provided)
R.A.EDIT
ON/OFF

For More Accurate Editing

Some VCRs make the transition from Record-Standby to Record mode faster than others. Even if you begin editing for the camcorder and the VCR at exactly the same time, you may lose scenes you wanted, or find that you have recorded scenes you did not want. For a cleanly edited tape, confirm and adjust the timing of the camcorder against your VCR.

DIAGNOSING VCR'S AGAINST CAMCORDER TIMING

1 PREPARE FOR R.A.EDIT

Play back the tape in the camcorder, then point the remote control at the camcorder's remote sensor and press **R.A.EDIT ON/OFF**.

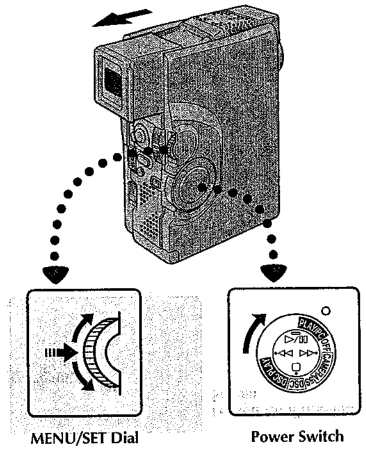
- "Random Assemble Editing Menu" appears.

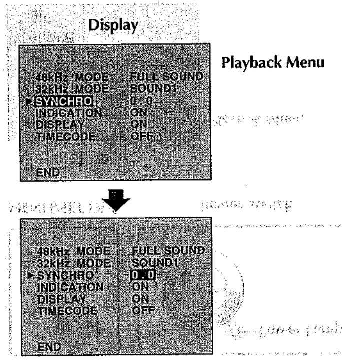
2 CHOOSE A SCENE

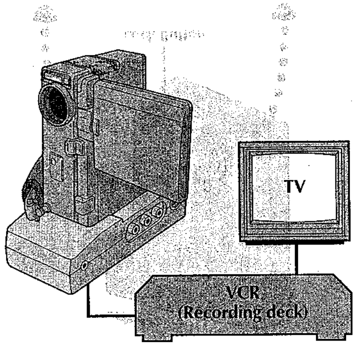
Perform Random Assemble Editing on Programme 1 only. In order to check VCR and camcorder timing, select the beginning of a scene transition as your Edit-In point.

3 PLAY BACK DUBBED SCENE

- If any images from the scene prior to the transition you chose for your Edit-In point were recorded, that means your VCR moves quickly from Record-Pause to Record mode.
- If the scene you tried to dub starts in progress, the VCR is slow to start recording.


MENU/SET Dial
Power Switch


Display
Playback Menu
48kHz MODE FULL SOUND
32kHz MODE SOUND1
SYNCHRO 0.0
INDICATION ON
DISPLAY ON
TIMECODE OFF
END
48kHz MODE FULL SOUND
32kHz MODE SOUND1
SYNCHRO 0.0
INDICATION ON
DISPLAY ON
TIMECODE OFF
END


TV
VCR
(Recording deck)

ADJUSTMENT OF VCR'S AGAINST CAMCORDER TIMING

4 ACCESS PLAYBACK MENU

Point the remote control at the camcorder's remote sensor and press **R.A.EDIT ON/OFF** to make the Random Assemble Editing menu disappear, then press **MENU/SET**. The Playback Menu appears.

5 SELECT FUNCTION

Move the highlight bar to "SYNCHRO" by rotating **MENU/SET**, then press it. The value for "SYNCHRO" is highlighted.

6 INPUT CORRECTION DATA

Based on the diagnostics performed (☞ pg. 88), you can now increase the VCR's speed by rotating **MENU/SET** upward. You can also slow down the VCR's speed by rotating **MENU/SET** downward. The adjustment range is from –1.3 to +1.3 seconds, in 0.1-second increments.

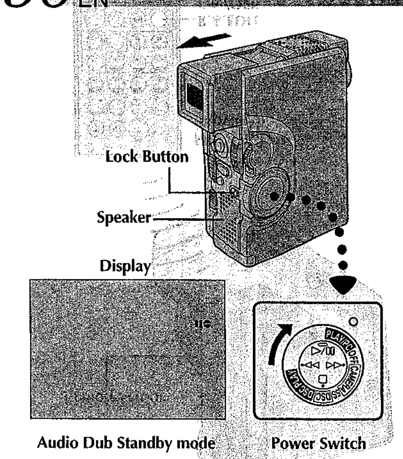
7 CLOSE MENU

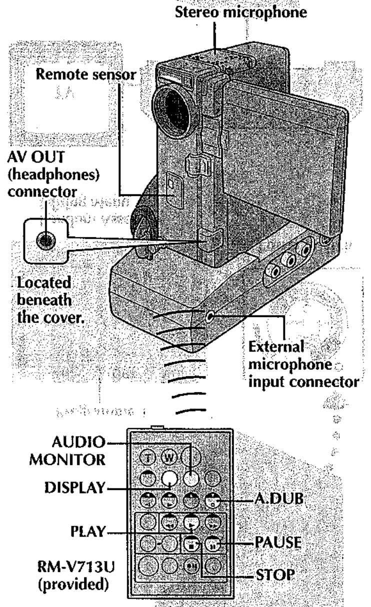
Press **MENU/SET** twice.

- Now perform Random Assemble Editing beginning with step **4** on page 85.

NOTES:

- *Before performing actual Random Assemble Editing, do a few Random Assemble Editing trial runs to check whether the value you have input is appropriate or not, and make adjustments accordingly.*
- *Depending on the recorder, there may be situations where the timing difference cannot be fully corrected.*


Lock Button
Speaker
Display
Audio Dub Standby mode
Power Switch


Stereo microphone
Remote sensor
AV OUT (headphones) connector
Located beneath the cover.
External microphone input connector
AUDIO MONITOR
DISPLAY
PLAY
RM-V713U (provided)
A.DUB
PAUSE
STOP

Audio Dubbing

The audio track can be customized only when recorded on the 32 kHz mode (☞ pg. 39).

NOTES:

- *Audio Dubbing is not possible on a tape recorded at 48 kHz, on a tape recorded in the LP mode or on a blank portion of a tape.*
- *To perform Audio Dubbing while watching in the television, make connections (☞ pg. 70).*

1 FIND EDIT-IN POINT

Play back the tape to locate the point where editing will start, then press **PAUSE (⏸)**.

2 ENGAGE AUDIO DUB STANDBY

While holding **A.DUB** (●) on the remote control, press **PAUSE (⏸)**. "⏸●" appears.

3 BEGIN DUBBING

Press **PLAY (▶)** , then begin "narrating".

- Speak into the microphone.

4 PAUSE DURING DUBBING

Press **PAUSE (⏸)**.

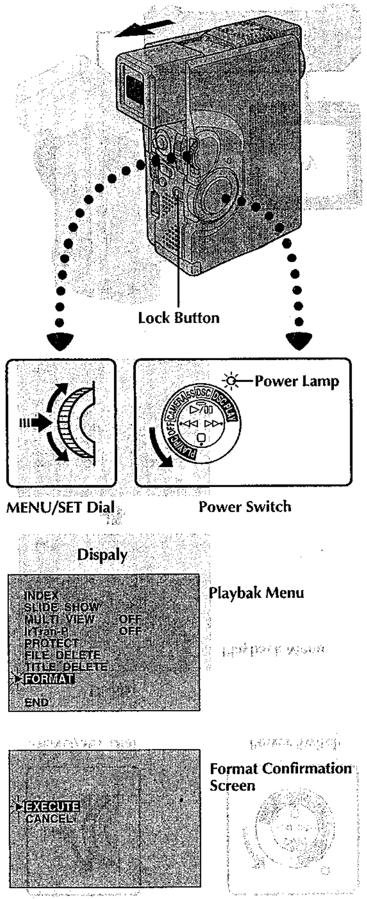
5 STOP DUBBING

Press **STOP (■)**.

NOTES:

- *Audio dubbing is also possible using an optional microphone.*
- *While an optional microphone is connected, the built-in microphone is disabled.*
- *When editing onto a tape that was recorded at 32 kHz, the old and new soundtracks are recorded separately.*
- *To select the desired sound for playback, press **AUDIO MONITOR** on the remote control.*
- *If you dub onto a blank space on the tape, the sound may be disrupted. Make sure you only edit recorded areas.*
- *If feedback or howling occurs during TV Playback, move the camcorder's microphone away from the TV, or turn down the TV's volume.*
- *Sound is not heard from the speaker during Audio Dubbing. To hear sound, connect optional headphones to the AV OUT (headphones) connector.*
- *If you change from 32 kHz to 48 kHz in mid-recording and then use the tape for Audio Dubbing, it is not effective from the point where 48 kHz recording began.*
- *During Audio Dubbing, when the tape moves to scenes recorded in the LP mode, scenes recorded at 48 kHz or a blank portion, Audio Dubbing stops and "ERROR! REFER MANUAL" appears.*

Recording sound	Display	Output sound
32 kHz	FULL SOUND	Original and new tracks are combined and output in stereo.
	SOUND 2	New track is output on both "L" and "R" channels in stereo.
	SOUND 1	Original track is output on both "L" and "R" channels in stereo.


Lock Button
Power Lamp
MENU/SET Dial
Power Switch
Dispaly
INDEX
SLIDE SHOW
MULTI VIEW OFF
IrTran-P OFF
PROTECT
FILE DELETE
TITLE DELETE
FORMAT
END
Playbak Menu
EXECUTE
CANCEL
Format Confirmation Screen

Initializing A MultiMediaCard

If the MultiMediaCard's memory is corrupt, "PLEASE INITIALIZE" will appear. In this case, you will have to initialise the MultiMediaCard.

1 SELECT OPERATION MODE

Set the Power Switch to "DSC PLAY", while pressing down the Lock Button. Open the LCD monitor fully or pull out the viewfinder fully.

2 ACCESS PLAYBACK MENU

Press **MENU/SET**. The Playback Menu appears.

3 SELECT FUNCTION

Rotate **MENU/SET** to move the highlight bar to "FORMAT" and press it. The Format Confirmation Screen appears.

4 INITIALIZE MULTIMEDIACARD

Rotate **MENU/SET** to move the highlight bar to "EXECUTE" and press it. The MultiMediaCard is initialised.

- If you wish to cancel initialization, rotate **MENU/SET** to select "CANCEL" and press it.

NOTES:

- *After initializing, all images stored in the MultiMediaCard, including those which have been protected, are cleared.*
- *Initialization is possible only when "PLEASE INITIALIZE" appears.*

CAUTION:

Do not perform any other operation (such as turning off the camcorder) during initialization. Also, be sure to use the provided AC Power Adapter/Charger, as the MultiMediaCard may be corrupted if the battery becomes exhausted during initialization.

TROUBLESHOOTING

If, after following the steps in the chart below, the problem still exists, please consult your nearest JVC dealer.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and wait a few minutes; and then re-connect it and proceed as usual from the beginning.

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
1. No power is supplied.	***1.*** • The power is not connected properly. • The battery is dead. • The LCD monitor is not open fully or the viewfinder is not pulled out when recording.	***1.*** • Connect the AC Power Adapter/Charger securely (☞ pg. 9). • Replace the dead battery with a fully charged one (☞ pg. 8, 9). • Open the LCD monitor fully or pull out the viewfinder. The LCD monitor turns on/off when it is opened/closed at approx. 90° while the Power Switch is set to any position except "OFF" if the viewfinder is not fully pulled out.
2. "SET DATE/TIME!" appears.	***2.*** • The built-in clock's rechargeable lithium battery is discharged. • The previously set date/time is erased.	***2.*** • Connect the camcorder to an AC outlet using the AC Power Adapter/Charger for over 24 hours to charge the clock's lithium battery (☞ pg. 11).
3. Recording cannot be performed.	***3.*** • The tape's erase protection switch is set to "SAVE". • The Power Switch is set to " PLAY/PC ". • "TAPE END" appears. • The cassette's cover is open.	***3.*** • Set the tape's erase protection switch to "REC" (☞ pg. 12). • Set the Power Switch to any position except " PLAY/PC " or "OFF" (☞ pg. 17). • Replace with new cassette (☞ pg. 12). • Close the cassette's cover.
4. There is no picture.	***4.*** • The camcorder is not getting power, or some other malfunction exists.	***4.*** • Turn the camcorder's power off and on again (☞ pg. 18).
5. Some functions are not available using **MENU/SET**.	***5.*** • The Operation Switch is set to " A ".	***5.*** • Set the Operation Switch to " M " (☞ pg. 17).
6. The focus does not adjust automatically.	***6.*** • Focus is set to "MANUAL". • The recording was done in a dark place, or the contrast was low. • The lens is dirty or covered with condensation.	***6.*** • Set Focus to "AUTO" (☞ pg. 47). • Clean the lens and check the focus again (☞ pg. 98).
7. The cassette will not load properly.	***7.*** • The cassette is in the wrong position. • The battery's charge is low.	***7.*** • Set it in the right position (☞ pg. 12). • Install a fully charged battery (☞ pg. 8, 9).
8. The MultiMediaCard will not load properly.	***8.*** • The MultiMediaCard is in the wrong position.	***8.*** • Set it in the right position (☞ pg. 14).
9. In the 5-Second mode, recording ends before 5 seconds have elapsed.	***9.*** • The 5-Second mode in the System Menu is set to "ANIM.".	***9.*** • Select "5S" or "5SD" in the System Menu (☞ pg. 34 – 39).
10. Snapshot mode cannot be used.	***10.*** • The Squeeze mode is selected.	***10.*** • Disengage the Squeeze mode (☞ pg. 37).
11. Although Snapshot is attempted, flash does not take place.	***11.*** • The subject is too bright with the flash set to "AUTO" or "AUTO ◉". • If ϟ blinks, the flash is being charged. • Multi-Analyser 4 or Multi-Analyser 9 is selected. • The camcorder is in the Record mode.	***11.*** • Set "FLASH" to "ON" in the Mode Menu (☞ pg. 32). • It can take up to 10 seconds to charge the flash. • Disengage Multi-Analyser 4 or Multi-Analyser 9 (☞ pg. 23, 31). • Set the camcorder in the Record-Standby mode (☞ pg. 32).
12. Although Snapshot is taken with the flash, Red-Eye Reduction does not take place.	***12.*** • The subject does not look straight toward the flash. • The subject does not look at the first flash, which is an important part of Red-Eye Reduction. • The camcorder is too far from the subject. • "FLASH" is not set to "AUTO ◉" in the Mode Menu.	***12.*** • The subject should look straight toward the flash, especially the first flash. If the subject does not see the first flash, it will be difficult for Red-Eye Reduction to take place (☞ pg. 32). • The flash is effective for subjects at a distance of approx. 0.7 m to 2 m from the camcorder (☞ pg. 32). • Set "FLASH" to "AUTO ◉" in the Mode Menu to display the Red-Eye Reduction indicator (☞ pg. 32).
13. The image taken using Snapshot is too dark.	***13.*** • "FLASH" is set to "OFF" in the Mode Menu. • The flash emission window is covered by fingers, etc.. • The flash brightness is set to produce a darker image (adjustment value: –3). • The camcorder is too far from the subject.	***13.*** • Set "FLASH" to any position except "OFF" in the Mode Menu (☞ pg. 32). • Do not cover the flash emission window. • Adjust the flash brightness to a larger value (☞ pg. 33). • The flash is effective for subjects at a distance of approx. 0.7 m to 2 m (☞ pg. 32).
14. The image taken using Snapshot is too bright.	***14.*** • "FLASH" is set to "ON" in the Mode Menu.	***14.*** • Set "FLASH" to any parameter other than "ON" in the Mode Menu (☞ pg. 32).
15. The colour of Snapshot looks strange.	***15.*** • The light source or the subject does not include white. Or there are various different light sources behind the subject.	***15.*** • Set "FLASH" to "ON" in the Mode Menu. Or find a white subject and compose your shot so that it also appears in the frame (☞ pg. 32).
16. Digital Zoom does not work.	***16.*** • 10X optical zoom is selected. • The Video Echo mode is activated. • Picture Wipe or Dissolve are being used in a scene transition. • 5-Second recording was done with the Power Switch set to "5S", and with "5SD" selected in the System Menu.	***16.*** • Turn off the Video Echo mode (☞ pg. 45). • Wait until the Picture Wipe or Dissolve effects are completed (☞ pg. 41 – 43). • Change the setting of either the System Menu or the Power Switch (☞ pg. 28).

CONTINUED ON NEXT PAGE

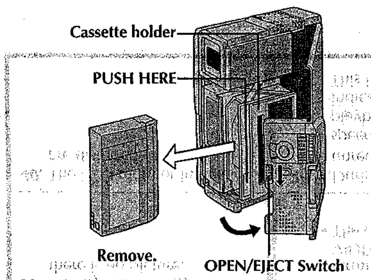
SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
17. Programme AE with special effects and Fade/Wipe Effects do not work.	***17.*** • The Operation Switch is set to " A " and/or the Power Switch is set to "5S".	***17.*** • Set the Operation Switch to " M " and/or set the Power Switch to " CAMERA " or " DSC ".
18. The Black & White Fader does not work.	***18.*** • The Sepia or Monotone mode is activated.	***18.*** • Turn off Sepia and Monotone (☞ pg. 44).
19. The Dissolve function does not work.	***19.*** • The Sepia, Monotone or Slow Shutter mode of Programme AE with special effects is activated. • The Squeeze mode is selected. • The previously selected mode of Programme AE with special effects was changed after the last selected scene for editing was registered.	***19.*** • Turn off Sepia, Monotone or Slow Shutter before adding Dissolve to a scene transition (☞ pg. 44). • Make sure that the Squeeze mode in the Mode Menu is set to "OFF" (☞ pg. 37). • Make sure you have selected the mode of Programme AE with special effects you want before starting editing (☞ pg. 44).
20. The Picture Wipe and Dissolve functions do not work.	***20.*** • The last selected editing scene is ending. • At the end of the last selected scene for editing, the Power Switch was set to "OFF". • The power is off.	***20.*** • Select Picture Wipe or Dissolve before beginning recording. The effects are then automatically activated (☞ pg. 42). • Do not turn off the camcorder's power after setting Edit-In and Edit-Out points, as they will all be erased (☞ pg. 42). • The camcorder automatically shuts off after 5 minutes have elapsed in the Record-Standby mode. Make sure you continue operations within 5 minutes after engaging Record-Standby mode (☞ pg. 44).
21. The picture wipe function doesn't work.	***21.*** • The Slow Shutter mode is activated. • The Squeeze or Cinema mode is selected in the Mode Menu.	***21.*** • Make sure the Squeeze mode, Cinema mode, or Slow Shutter mode is not activated when preparing to use the Picture Wipe function (☞ pg. 37, 45).
22. Scene transition does not go as expected.	***22.*** • When using "Picture Wipe/ Dissolve" (☞ pg. 42) or "Dissolves during 5 second recording mode" (☞ pg. 28), there is a delay of a fraction of a second between the previous record stop-point and the Dissolve start-point. This is normal, but this slight delay becomes especially noticeable when shooting fast-moving subject or during rapid panning.	***22.***

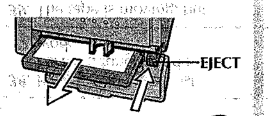
SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
23. The Video Echo mode does not work.	***23.*** • The Picture Wipe or Dissolve functions are in use. • The Squeeze mode is selected in the Mode Menu. • A Fade-In or Fade-Out is in progress. • Dissolve during 5-second mode recording is in use.	***23.*** • Make sure the Squeeze mode is set to "OFF" (☞ pg. 34 – 39). • Do not try to use the Video Echo mode during a Fade-In or Fade-Out or when Dissolve is activated during 5-second mode recording (☞ pg. 44, 45).
24. Even when Slow Shutter is not selected, the image looks like it is activated.	***24.*** • When shooting in the dark, the unit becomes highly sensitive to light and the image takes on an effect similar to Slow Shutter.	***24.*** • If you want the lighting to look more natural, set GAIN UP to "AGC" or "OFF" in the Mode Menu (☞ pg. 34 – 39).
25. There is no strobe when the Classic Film or Strobe mode is activated.	***25.*** • The Picture Wipe or Dissolve function is in use. • Dissolve during 5-second mode recording is in use.	***25.*** • Do not try to use the Classic Film or Strobe mode during a scene transition (☞ pg. 44, 45).
26. White Balance cannot be activated.	***26.*** • The Sepia or Monotone mode is activated.	***26.*** • Turn off Sepia or Monotone before setting White Balance (☞ pg. 44, 45).
27. When shooting a subject illuminated by bright light, vertical lines appear.	***27.*** • This is a result of exceedingly high contrast, and is not a malfunction.	***27.***
28. When the screen is under direct sunlight during shooting, the screen becomes red or black for an instant.	***28.*** • This is not a malfunction.	***28.***
29. During recording, the date/ time does not appear.	***29.*** • "DISPLAY" is set to "OFF" in the Date/Time Menu. • Interface Shooting is performed.	***29.*** • Set "DISPLAY" to "ON" in the Date/Time Menu (☞ pg. 26). • During Interface Shooting, the date/time does not appear (☞ pg. 21). • Set "INDICATION" to "ON" in the Date/Time Menu (☞ pg. 27).
30. Images stored in the MultiMediaCard cannot be deleted.	***30.*** • Images stored in the MultiMediaCard are protected.	***30.*** • Remove protection from the images stored in the MultiMediaCard and delete them (☞ pg. 62, 64).
31. The indicators and messages do not appear.	***31.*** • "ON SCREEN" is set to "OFF" in the Date/Time Menu. • You have made the indicators disappear.	***31.*** • Set "ON SCREEN" to "ON" in the Date/Time Menu (☞ pg. 26). • Set "INDICATION" to "ON" in the Date/Time Menu (☞ pg. 27).
32. Images on the LCD monitor appear dark or whitish.	***32.*** • In places subject to low temperature, images become dark due to the characteristics of the LCD monitor. When this happens, the displayed colours differ from those that are actually recorded. This is not a defect of the camcorder. • When the LCD monitor's fluorescent light reaches the end of its service life, images on the LCD monitor become dark. Consult your nearest JVC dealer.	***32.*** • Adjust the brightness and angle of the LCD monitor (☞ pg. 21).

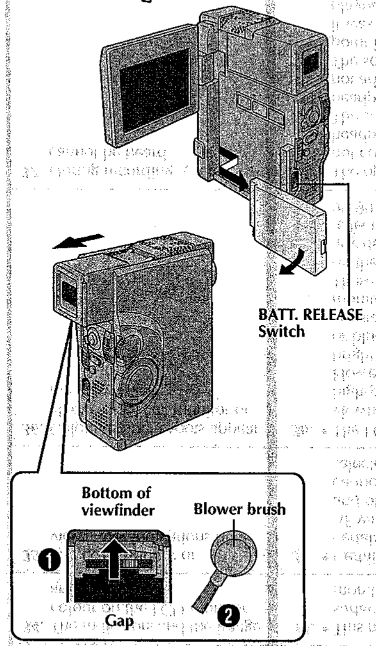
CONTINUED ON NEXT PAGE

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
33. The rear of the LCD monitor is hot.	**33.** • The light used to illuminate the LCD monitor causes it to become hot.	**33.** • Close the LCD monitor to turn it off or set the Power Switch to "OFF", and let the unit cool down.
34. The indicators and the image colour on the LCD monitor are not clear.	**34.** • This may occur when the surface or the edge of the LCD monitor is pressed.	**34.** ———
35. The LCD monitor or viewfinder indications blink.	**35.** • Certain Fade/Wipe effects, certain modes of Programme AE with special effects, "DIS" and other functions that cannot be used together are selected at the same time.	**35.** • Re-read the sections covering Fade/Wipe effects, Programme AE with special effects and "DIS" (☞ pg. 37, 41 – 45).
36. Coloured bright spots appear all over the LCD monitor or the viewfinder.	**36.** • The LCD monitor and the viewfinder are made with high-precision technology. However, black spots or bright spots of light (red, green or blue) may appear constantly on the LCD monitor or the viewfinder. These spots are not recorded on the tape. This is not due to any defect of the unit. (Effective dots: more than 99.99 %)	**36.** ———
37. During recording, sound cannot be heard.	**37.** • The optional headphones are not connected to the headphones connector. • The sound volume of the headphones connector was not adjusted appropriately. The sound volume at this point is the same as the level it was adjusted to during playback.	**37.** • Connect the optional headphones to the headphones connector (☞ pg. 100). • Adjust the sound volume during playback (☞ pg. 52).
38. Play, Rewind and Fast-Forward functions do not work.	**38.** • The Power Switch is not set to "PLAY/PC".	**38.** • Set the Power Switch to "PLAY/PC" (☞ pg. 52).
39. The tape is moving, but there is no picture.	**39.** • Your TV has AV input terminals, but is not set to its VIDEO mode. • The cassette's cover is open.	**39.** • Set the TV to the mode or channel appropriate for video playback (☞ pg. 70, 71). • Close the cassette's cover (☞ pg. 12).
40. The LCD monitor indications are distorted.	**40.** • During playback of the unrecorded portion, High-speed Search and still playback, LCD monitor indications appear distorted. This is not a defect.	**40.** ———

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
41. Images on the LCD monitor are jittery.	**41.** • The speaker volume is too great.	**41.** • Turn the speaker volume down (☞ pg. 52).
42. The LCD monitor, the viewfinder and the lens have become dirty (ex. fingerprints).	**42.** ———	**42.** • Wipe them gently with soft cloth. Wiping strongly can cause damage.
43. An unusual mark appears.	**43.** ———	**43.** • Check the section of the manual that explains LCD monitor/viewfinder indications (☞ pg. 102 – 105).
44. An error indication (E01 — E06) appears.	**44.** • A malfunction of some kind has occurred. In this case the camcorder's functions become unusable.	**44.** • Remove the power supply (battery pack, etc.) and wait a few minutes for the indication to clear. When it does, you can resume using the camcorder. If the indication remains even though you repeat the above two or three times, please consult your nearest JVC dealer.
45. The charger indicator on the AC Power Adapter/Charger does not light.	**45.** • The temperature of the battery is extremely high/low. • Charging is difficult in places subject to extremely high/low temperatures.	**45.** • To protect the battery, it is recommended to charge it in places with a temperature of 10°C to 35°C (☞ pg. 107).
46. The recording mode indicator "LP" blinks.	**46.** • This occurs when recording in the LP mode is not available. After the indicator blinks, the recording mode switches to "SP" and recording goes on.	**46.** ———
47. Picture does not appear on the LCD monitor.	**47.** • The viewfinder is pulled out. • The LCD monitor's brightness setting is too dark.	**47.** • Push the viewfinder back in. • Adjust the brightness of the LCD monitor (☞ pg. 21). • If the monitor is tilted upward 180 degrees, open the monitor fully (☞ pg. 20).
48. When the image is printed from the printer, a black bar appears at the bottom of the screen.	**48.** • This is not a malfunction.	**48.** • By recording with "DIS" activated (☞ pg. 37) this can be avoided.
49. When the camcorder is connected via the DV connector, the camcorder does not operate.	**49.** • The DV cable was plugged/unplugged with power turned on.	**49.** • Turn the camcorder's power off and on again, then operate it.







After Use

1 Turn off the camcorder.

2 Slide down **OPEN/EJECT** in the direction of the arrow, then swing the cover open until it locks. The cassette holder opens automatically. Remove the cassette.

3 Press "PUSH HERE" to close the cassette cover.

4 Open the card cover, then press **EJECT**. The MultiMediaCard is disengaged from the camcorder. Remove the MultiMediaCard.

5 Close the card cover.

6 Slide down **BATT. RELEASE** and remove the battery pack.

Cleaning The Camcorder

1 **CLEAN EXTERIOR**
Wipe gently with a soft cloth.

- Put cloth in diluted mild soap and wring it well to wipe off heavy dirt. Then wipe again with a dry cloth.

2 **CLEAN LCD MONITOR**
Wipe gently with the provided cleaning cloth or a commercially available soft cloth. Be careful not to damage the monitor. Close the LCD monitor.

3 **CLEAN LENS**
Blow it with a blower brush, then wipe gently with lens cleaning paper.

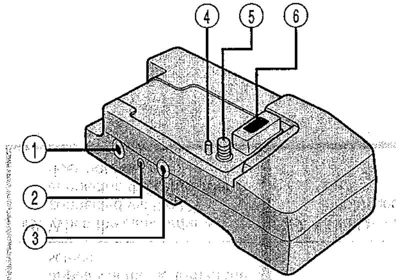
4 **PULL OUT VIEWFINDER FULLY**

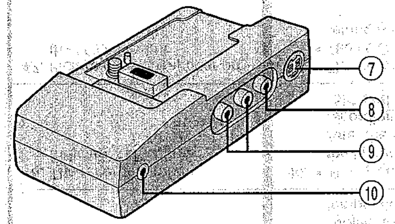
5 **CLEAN VIEWFINDER**
Slide the cover in the direction of the arrow ❶. Insert a lens blower or a soft cloth into the gap at the bottom of the viewfinder and clean the interior of the viewfinder with it ❷.

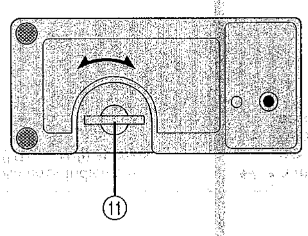
6 **PUSH VIEWFINDER BACK IN**
Close the cover until it locks in place. Push the viewfinder back in.

NOTES:

- *Avoid using strong cleaning agents such as benzine or alcohol.*
- *Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.*
- *Mold may form if the lens is left dirty.*
- *When using a cleaner or chemically treated cloth refer to the cautions of each product.*







① JLIP (Joint Level Interface Protocol) Connector
Connect to a JLIP-compatible camcorder or VCR to control it from the computer using the provided Software.

NOTE:
Make sure that the camcorder is turned on while connecting the camcorder to a PC using the Docking Station's JLIP connector. If the camcorder is turned off (because the Power Switch is set to "OFF" or due to Auto Shut Off etc.) while the JLIP programmeme software is used, it will be impossible to control the connected devices from the computer. In such a case, first try turning the camcorder on again, or unplug the JLIP connection cable from the Docking Station's JLIP connector. Then, initialise or run the software again.*

* **Auto Shut Off:**
If 5 minutes elapse in the Record-Standby mode or in the Pause mode, the camcorder's power shuts off automatically to conserve energy.

② PC Connector [DIGITAL STILL] .... ☞ pg. 72

③ Edit Connector [EDIT] .... ☞ pg. 85
Connect the editing cable when performing Random Assemble Editing (☞ pg. 84 – 89).

④ Stud .... ☞ pg. 70

⑤ Screw .... ☞ pg. 70

⑥ Multi Connector
The Docking Station can be connected with this camcorder through this connector. Never touch it with your hand or hit it with a hard object; if the pins are damaged, the connectors will become unusable due to contact failure.

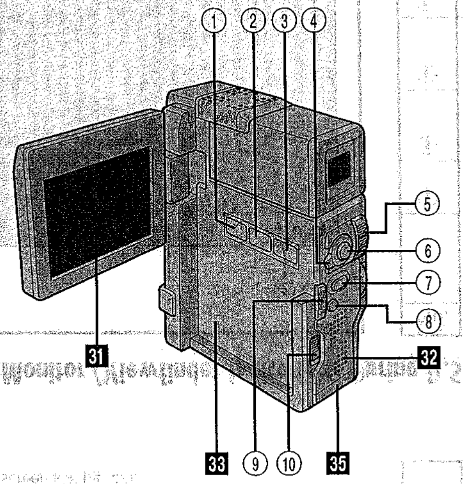
⑦ S-Video Output Connector
[S OUT] .... ☞ pg. 70, 85

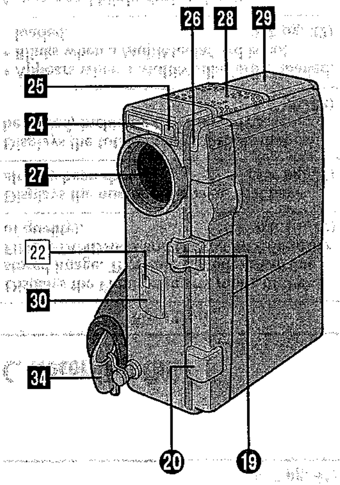
⑧ Video Output Connector
[VIDEO] .... ☞ pg. 70, 85

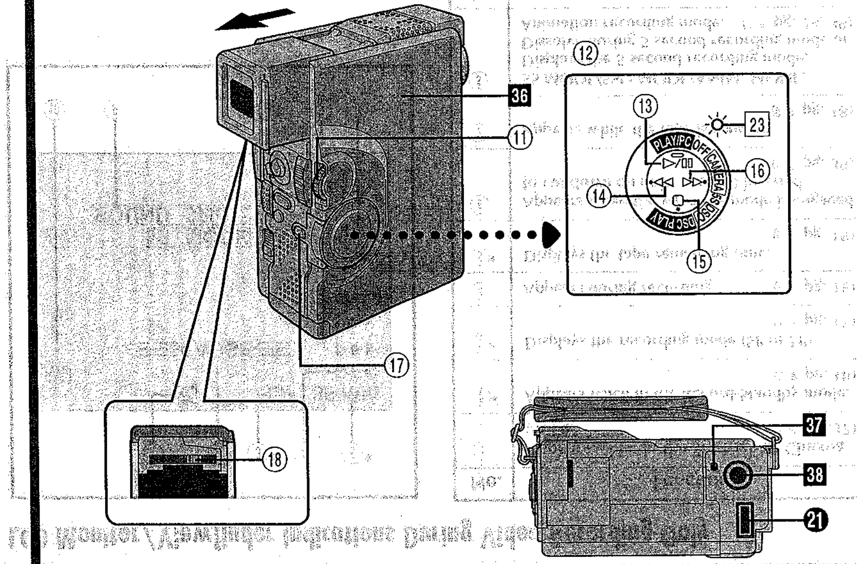
⑨ Audio Output Connector
[AUDIO L/R] .... ☞ pg. 70, 85

⑩ External Stereo Microphone Input
Connector [MIC] .... ☞ pg. 90

⑪ Screw Knob .... ☞ pg. 70
To attach the camcorder, tighten this clockwise.







Controls

① Snapshot Mode Button
[SNAPSHOT MODE] .... ☞ pg. 22, 30

② Multi Screen Button
[MULTI SCREEN] .... ☞ pg. 40

③ Title/Frame [TITLE] Button .... ☞ pg. 69

④ Operation Switch [A, M] .... ☞ pg. 17

⑤ • Power Zoom Lever [T/W] .... ☞ pg. 24
• Speaker/Headphone Volume
Control [VOL.] .... ☞ pg. 52

⑥ • Recording Start/Stop Button
[START/STOP] .... ☞ pg. 18
• Transfer Button [TRANS] .... ☞ pg. 79

⑦ SNAPSHOT/PHOTO Button .... ☞ pg. 22, 30

⑧ Back Light Button [BACK LIGHT] .... ☞ pg. 48

⑨ OPEN/EJECT Switch .... ☞ pg. 12

⑩ Battery Release Switch
[BATT. RELEASE] .... ☞ pg. 9

⑪ • MENU/SET Dial [+, –, PUSH] ...... ☞ pg. 11, 34
• LCD Monitor/Viewfinder Brightness
Control .... ☞ pg. 21

⑫ Power Switch .... ☞ pg. 17

⑬ Play/Pause Button [▶/❚❚] .... ☞ pg. 52

⑭ Rewind Button [◀◀] .... ☞ pg. 52

⑮ Stop Button [■] .... ☞ pg. 52

⑯ Fast-Forward Button [▶▶] .... ☞ pg. 52

⑰ Lock Button .... ☞ pg. 17

⑱ Diopter Adjustment Control .... ☞ pg. 10

Connectors

The connectors ⓳ to ㉑ are located beneath the cover.

⓳ Digital Video Connector
[DV OUT] (i.link*) .... ☞ pg. 72, 73, 75
*i.Link refers to the IEEE1394-1995 industry specification and extensions thereof. The i logo is used for products compliant with the i.Link standard.

⓴ • Audio/Video Output Connector
[AV OUT] .... ☞ pg. 70
• Headphones Connector [∩] .... ☞ pg. 90

㉑ Multi Connector
When attached to the Docking Station, this part is connected.

Indicators

22 Tally Lamp .... ☞ pg. 18

23 Power Lamp .... ☞ pg. 18

Other Parts

24 Flash .... ☞ pg. 32

25 Flash Sensor .... ☞ pg. 32
Be careful not to cover this area, as it contains a sensor required by the flash.

26 Camera Sensor
Be careful not to cover this area; a sensor necessary for shooting is built-in here.

27 Lens Cover
Opens when the viewfinder is pulled out or the LCD monitor is opened fully.

28 Stereo Microphone .... ☞ pg. 90

29 Viewfinder .... ☞ pg. 10

30 • Remote sensor .... ☞ pg. 80
• Infrared Transmitter/Receiver .... ☞ pg. 78

31 LCD Monitor .... ☞ pg. 21

32 Speaker .... ☞ pg. 52

33 Battery Pack Mount .... ☞ pg. 9

34 Grip Strap .... ☞ pg. 10

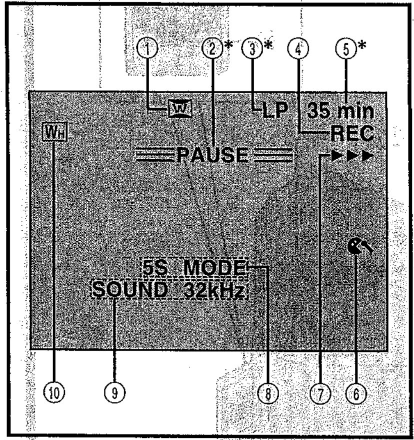
35 Card Cover .... ☞ pg. 14

36 Cassette Cover .... ☞ pg. 12

37 Stud Hole .... ☞ pg. 70

38 Tripod Mounting Socket .... ☞ pg. 16, 70

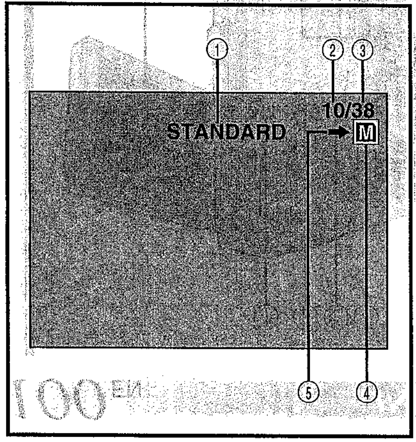
LCD Monitor/Viewfinder Indications During Video Recording Only



No.	Function
①	Appears when in the Squeeze or Cinema mode. (☞ pg. 37)
②*	Appears when in the Record-Standby mode. (☞ pg. 18)
③*	Displays the recording mode (SP or LP). (☞ pg. 13)
④	Appears during recording. (☞ pg. 18)
⑤*	Displays the tape remaining time. (☞ pg. 19)
⑥	Appears when the wind cut mode is engaged to cut down on noise created by wind. (☞ pg. 39)
⑦	Appears while the tape is running. (☞ pg. 18)
⑧	5S MODE/5SD MODE/ANIM. MODE: Displays the 5 second recording mode, Dissolve during 5 second recording mode or Animation recording mode. (☞ pg. 28, 39)
⑨	Displays the sound mode for approx. 5 seconds after turning on the camcorder. (☞ pg. 39)
⑩	Displays the selected Fade/Wipe effect. (☞ pg. 41)

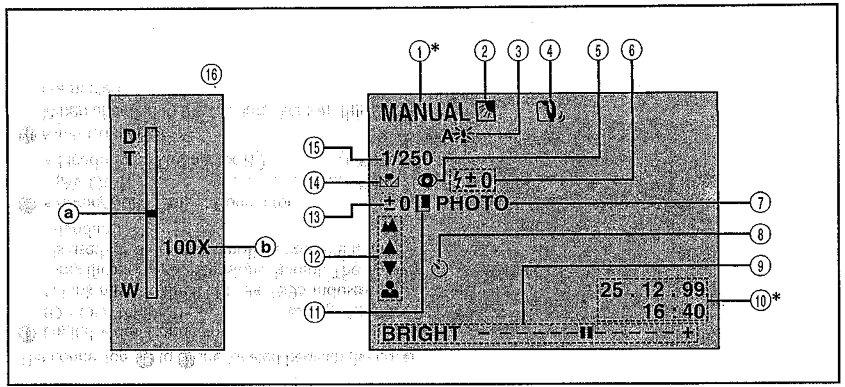
* : Setting "INDICATION" to "OFF" in the Date/Time Menu lets you remove indications marked with * from the screen (☞ pg. 27).

LCD Monitor/Viewfinder Indications During D.S.C. Recording Only



No.	Function
①	Displays the Picture Quality mode of the stored image. There are 3 modes available: FINE, STANDARD and ECONOMY (in order of quality). (☞ pg. 15, 22)
②	Displays the number of images that have already been shot. (☞ pg. 22)
③	Displays the total number of shots that can be stored, including those already taken. (☞ pg. 22)
④	• Appears when a MultiMediaCard is loaded. • Blinks when a MultiMediaCard is not loaded. (☞ pg. 22)
⑤	Appears and blinks during shooting. (☞ pg. 22)

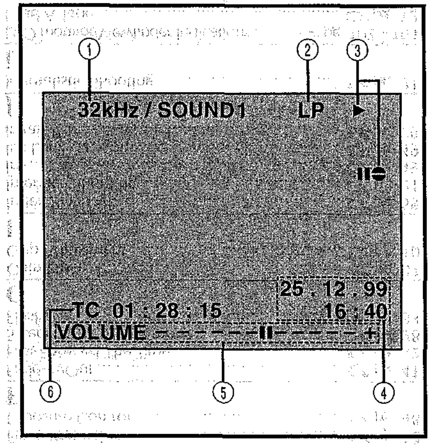
LCD Monitor/Viewfinder Indications During Both Video And D.S.C. Recording



No.	Function
①*	Displays the operation mode position. (☞ pg. 17)
②	Appears when backlight compensation is used. (☞ pg. 48)
③	Appears when Auto Slow Shutter is engaged ("GAIN UP" is set to "AUTO"). (☞ pg. 37)
④	Appears when Digital Image Stabilizer ("DIS") is engaged. (☞ pg. 37)
⑤	Appears when "FLASH" is set to "AUTO ◉" in the Mode Menu. (☞ pg. 32)
⑥	Appears when the flash is ready. A number appears next to the indication after adjusting the brightness of the flash. (☞ pg. 32, 33)
⑦	Appears when taking a Snapshot. (☞ pg. 22, 30)
⑧	Appears during Self-Timer recording. (☞ pg. 29)
⑨	Displays the brightness of the LCD monitor or the viewfinder. (☞ pg. 21)
⑩*	Displays the date/time. (☞ pg. 11, 38)
⑪	Appears when the iris is locked. (☞ pg. 49)
⑫	Appears when the focus is adjusted manually. (☞ pg. 47)
⑬	Appears when the exposure is adjusted. (☞ pg. 48)
⑭	Appears when the white balance is adjusted. (☞ pg. 51)
⑮	Displays the selected Program AE with special effects. (☞ pg. 44)
⑯	Appears during zooming. (☞ pg. 24) ⓐ Zoom level indicator ⓑ Approximate zoom ratio

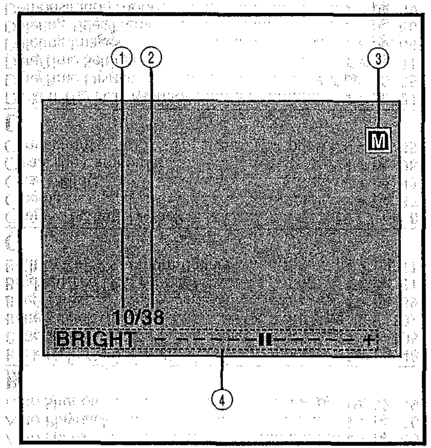
* : Setting "INDICATION" to "OFF" in the Date/Time Menu lets you remove indications marked with * from the screen (☞ pg. 27).

LCD Monitor/Viewfinder Indications During Video Playback



No.	Function
①	Displays the sound mode. (☞ pg. 55)
②	Displays the tape speed.
③	Appears while a tape is running. ▶ : Playback ▶▶ : Fast-Forward/Shuttle search ◀◀ : Rewind/Shuttle search ▮▮ : Pause ▮▮▶ : Forward slow-motion ◀▮▮ : Reverse slow-motion ⊖ : Audio Dubbing ▮▮⊖ : Audio Dubbing Pause
④	Displays the date/time. (☞ pg. 55)
⑤	BRIGHT: Displays the brightness of the LCD monitor or the viewfinder. (☞ pg. 21) VOLUME: Displays the speaker or headphone volume. (☞ pg. 52)
⑥	Displays the time code. (☞ pg. 55)

LCD Monitor/Viewfinder Indications During D.S.C. Playback



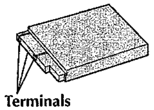
No.	Function
①	Displays the index number of the image file. (☞ pg. 56)
②	Displays the total number of stored images. (☞ pg. 56)
③	• Appears when a MultiMediaCard is loaded. • Blinks when a MultiMediaCard is not loaded.
④	Displays the brightness of the LCD monitor or the viewfinder. (☞ pg. 21)

Warning Indications

Indications	Function
▮▮▮	Displays the battery remaining power. Remaining power level: high —▮▮▮→▮▮→▮→▭ Remaining power level: exhausted As the battery power comes close to nil, the battery indicator ▭ blinks. When the battery power is exhausted, power turns off automatically.
🖭	Appears when no tape is loaded, or when the erase protection tab is set to "SAVE". (☞ pg. 12)
⊗	Appears if dirt is detected on the heads during recording. (☞ pg. 108)
💧	Appears if condensation occurs. When this indication is displayed, the camcorder turns off automatically.
TAPE!	Appears for approx. 10 seconds when the Power Switch is set to "CAMERA" or "5S" when a tape is not loaded.
TAPE END	Appears when the tape ends during recording or playback. (☞ pg. 19)
SET DATE/TIME!	• Appears when the date/time is not set. (☞ pg. 11) • Appears when the clock (lithium) battery is discharged and the previously set date/time is erased. (☞ pg. 11)
ERROR! REFER MANUAL	Appears when Audio Dubbing is unavailable. (☞ pg. 90)
MEMORY IS FULL	Appears when the MultiMediaCard's memory is full and shooting is not possible.
MEMORY CARD!	Displayed for approx. 10 seconds when the Power Switch is set to "DSC" or "DSC PLAY" when a MultiMediaCard is not loaded.
PLEASE INITIALIZE	Appears when there is a problem with a MultiMediaCard and its memory is corrupt. Initialize the MultiMediaCard. (☞ pg. 91)
NO STORED IMAGE	Appears when the Power Switch set to "DSC PLAY" when there are no images stored in the MultiMediaCard.
E01 — E06	The error indications (E01 — E06) show what type of malfunction has occured. When an error indication appears, the camcorder turns off automatically. Remove the power supply (battery, etc.) and wait a few minutes for the indication to clear. When it does, you can resume using the camcorder. If the indication remains, consult your nearest JVC dealer. (☞ pg. 97)

A
AC Power Adapter/Charger ☞ pg. 8, 9
Animation ☞ pg. 39
Audio Dubbing ☞ pg. 90
Auto Focus ☞ pg. 46
Auto Playback ☞ pg. 56
Auto Shut off ☞ pg. 19, 52, 99
B
Back Light Compensation ☞ pg. 48
Battery Low ☞ pg. 105
Battery Pack ☞ pg. 8, 9, 107
Beep/Tally ☞ pg. 39
Brighten The LCD Monitor ☞ pg. 21
Built-in Clock's Lithium Battery ☞ pg. 11
C
Charge The Battery Pack ☞ pg. 8
Cinema ☞ pg. 37
Classic Film ☞ pg. 45
Clean The Camcorder ☞ pg. 98
Connections ☞ pg. 9, 70 – 75, 85
D
Darken The LCD Monitor ☞ pg. 21
Date/Time Display ☞ pg. 26, 55
Date/Time Settings ☞ pg. 11
Deleting Images ☞ pg. 64
Deleting Titles/Frames ☞ pg. 66
Demonstration Mode ☞ pg. 39
Digital Dubbing ☞ pg. 75
Digital Zoom ☞ pg. 24, 37
DIS (Digital Image Stabiliser) ☞ pg. 37
Dioptre Adjustment ☞ pg. 10
Dissolve During 5-second Recording Mode ... ☞ pg. 28
Dubbing ☞ pg. 74 – 79
E
Erase Protection ☞ pg. 12
Exposure Control ☞ pg. 48
F
Fade-In/Out ☞ pg. 41
Fast-Forward The Tape ☞ pg. 52
5-second recording mode ☞ pg. 28
Flash ☞ pg. 32, 33
G
Gain Up ☞ pg. 37
Grip Adjustment ☞ pg. 10
I
Index Playback ☞ pg. 59
Interface Shooting ☞ pg. 21
Iris ☞ pg. 49
Iris Lock ☞ pg. 49
IrTran-P ☞ pg. 78
J
Journalistic Shooting ☞ pg. 21
L
LCD monitor/Viewfinder Indications ☞ pg. 102 – 104
Load A Tape ☞ pg. 12
M
Manual Focus ☞ pg. 47
Mode Menu ☞ pg. 37
Monotone ☞ pg. 45
Motor Drive Mode ☞ pg. 30
Multi-Image Screen ☞ pg. 60
MultiMediaCard ☞ pg. 14, 107
Multi Screen Mode ☞ pg. 40
O
Operation Switch Position ☞ pg. 17
P
Picture Quality Mode ☞ pg. 15
Picture Wipe/Dissolve ☞ pg. 42
Playback Menu ☞ pg. 54
Playback Special Effects ☞ pg. 83
Playback Zoom ☞ pg. 82
Power Switch Position ☞ pg. 17
Programme AE With Special Effects ☞ pg. 44
Protecting Images ☞ pg. 62
Provided Accessories ☞ pg. 6, 7
R
Random Assemble Editing ☞ pg. 84 – 89
Record-Standby ☞ pg. 18
Recording Format ☞ pg. 5
Recording Menu ☞ pg. 36
Recording Mode ☞ pg. 13
Red-Eye Reduction ☞ pg. 32
Remote Control ☞ pg. 80
Rewind The Tape ☞ pg. 52
S
Self-Recording ☞ pg. 21
Self-Timer ☞ pg. 29
Sepia ☞ pg. 45
Set Remote Control/VCR Code ☞ pg. 84
Shuttle Search ☞ pg. 53
Shutter Speed ☞ pg. 45
Slide Show ☞ pg. 57
Slow-Motion Playback ☞ pg. 82
Slow Shutter ☞ pg. 45
Snapshot Mode ☞ pg. 22, 30
Sound Mode ☞ pg. 39, 55
Specifications ☞ pg. 109, 110
Squeeze ☞ pg. 37
Still Playback ☞ pg. 53
Strobe ☞ pg. 45
System Menu ☞ pg. 39
T
Tele Macro ☞ pg. 39
Time Code ☞ pg. 5, 25
Title/Frame ☞ pg. 68
Tripod Mounting ☞ pg. 16
Twilight ☞ pg. 45
U
Unload A Tape ☞ pg. 12
V
Video Echo ☞ pg. 45
W
White Balance ☞ pg. 50, 51
Wide Mode ☞ pg. 37
Wind Cut ☞ pg. 39
Wipe In/Out ☞ pg. 41
Z
Zooming ☞ pg. 24

Battery Packs



The supplied battery pack is a lithium-ion battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

1. To avoid hazard . . .
... **do not** burn.
... **do not** short-circuit the terminals.
... **do not** modify or disassemble.
... **do not** expose the battery to temperatures exceeding 60°C (140°F), as this may cause the battery to overheat, explode or catch fire.
... use only specified chargers.

2. To prevent damage and prolong service life . . .
... **do not** subject to unnecessary shock.
... charge in an environment where temperatures are within the tolerances shown in the chart below. This is a chemical reaction type battery—cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
... fully charge and then fully discharge the battery every 6 months when storing the battery pack over a long period time.
... remove from charger or powered unit when not in use, as some machines use current even when switched off.

NOTES:

- *It is normal for the battery pack to be warm after charging, or after use.*

Temperature Range Specifications
Charging .... 10°C to 35°C (50°F to 95°F)
Operation .... 0°C to 40°C (32°F to 104°F)
Storage .... –10°C to 30°C (–14°F to 86°F)

- *Recharging time is based on room temperature of 20°C (68°F).*
- *The lower the temperature, the longer recharging takes.*

Cassettes

To properly use and store your cassettes, be sure to read the following cautions:

1. During use . . .
... make sure the cassette bears the Mini DV mark.
... be aware that recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
... make sure the cassette is positioned properly when inserting.
... do not load and unload the cassette repeatedly without allowing the tape to run at all. This slackens the tape and can result in damage.
... do not open the front tape cover. This exposes the tape to fingerprints and dust.

2. Store cassettes . . .
... away from heaters or other heat sources.
... out of direct sunlight.
... where they won't be subject to unnecessary shock or vibration.
... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).
... vertically, in their original cases.

MultiMediaCards

To properly use and store your MultiMediaCards, be sure to read the following cautions:

1. During use . . .
... make sure the MultiMediaCard bears the MultiMediaCard mark.
... make sure the MultiMediaCard is positioned properly when inserting.

2. While the MultiMediaCard is being accessed (during recording, playback, deletion, initialisaion, etc.) . . .
... never unload the MultiMediaCard and never turn off the camcorder.

3. Store MultiMediaCards . . .
... away from heaters or other heat sources.
... out of direct sunlight.
... where they won't be subject to unnecessary shock or vibration.
... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).

LCD Monitor

1. To prevent damage to the LCD monitor, DO NOT . . .
... push it strongly or apply any shocks.
... place the camcorder with the LCD monitor on the bottom.

2. To prolong service life . . .
... avoid rubbing it with coarse cloth.

3. Be aware of the following phenomena for LCD monitor use. These are not malfunctions:
- While using the camcorder, the surface around the LCD monitor and/or the back of the LCD monitor may heat up.
- If you leave power on for a long time, the surface around the LCD monitor becomes hot.

Main Unit

1. For safety, DO NOT . . .
... open the camcorder's chassis.
... disassemble or modify the unit.
... short-circuit the terminals of the battery pack. Keep it away from metallic objects when not in use.
... allow inflammables, water or metallic objects to enter the unit.
... remove the battery pack or disconnect the power supply while the power is on.
... leave the battery pack attached when the camcorder is not in use.

2. Avoid using the unit . . .
... in places subject to excessive humidity or dust.
... in places subject to soot or steam such as near a cooking stove.
... in places subject to excessive shock or vibration.
... near a television set.
... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).

.... in places subject to extremely high (over 40°C or 104°F) or extremely low (under 0°C or 32°F) temperatures.

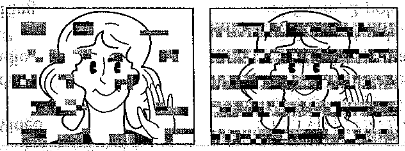
3. DO NOT leave the unit . . .

.... in places of over 50°C (122°F).
.... in places where humidity is extremely low (below 35%) or extremely high (above 80%).
.... in direct sunlight.
.... in a closed car in summer.
.... near a heater.

4. To protect the unit, DO NOT . . .

.... allow it to become wet.
.... drop the unit or strike it against hard objects.
.... subject it to shock or excessive vibration during transportation.
.... keep the lens directed at extremely bright objects for long periods.
.... expose the lens to direct sunlight.
.... carry it by holding the LCD monitor or the viewfinder.
.... swing it excessively when using the hand strap or the grip.
.... swing the soft camera case excessively when the camcorder is inside it.

5. Dirty heads can cause the following problems:



- No picture during playback.
- Blocks of noise appear during playback.
- During recording, the Head Clog Warning indicator "⊗" appears.

In such cases, use the optional Cleaning Cassette. Insert it and play back. If the cassette is used more than once consecutively, damage to the video heads may result. After the camcorder plays back for about 20 seconds, it stops automatically. Also refer to the Cleaning Cassette's instructions.

If, after using the Cleaning Cassette, the problems still exist, consult your nearest JVC dealer.

Mechanical moving parts used to move the video heads and video tape tend to become dirty and worn out over time. In order to maintain a clear picture at all times, periodic check-ups are recommended after using the unit for about 1,000 hours. For periodic check-ups please consult your nearest JVC dealer.

How To Handle A CD-ROM

- Take care not to soil or scratch the mirror surface (opposite to the printed surface). Do not write anything or put a sticker on either the front or back surface. If the CD-ROM gets dirty, gently wipe it with a soft cloth outward from the centre hole using a circular motion.
- Do not use conventional disc cleaners or cleaning spray.
- Do not bend the CD-ROM or touch its mirror surface.
- Do not store your CD-ROM in a dusty, hot or humid environment. Keep it away from direct sunlight.

About moisture condensation . . .

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and wait a few minutes and then re-connect it and proceed as usual from the beginning.

Camcorder

For General

Power supply	: DC 6.3 V ⎓ (Using the AC Power Adapter/Charger) DC 7.2 V ⎓ (Using battery pack)
Power consumption	
LCD monitor off, viewfinder on	: Approx. 4.5 W
LCD monitor on, viewfinder off	: Approx. 5.4 W
Dimensions	: 48 (W) x 119 (H) x 89 (D) mm (with the LCD monitor closed and the viewfinder pushed back in)
Weight	: Approx. 440 g (without grip strap, cassette, MultiMediaCard and battery) Approx. 525 g (incl. grip strap, cassette, MultiMediaCard and battery)
Operating temperature	: 0°C to 40°C
Operating humidity	: 35% to 80%
Storage temperature	: –20°C to 50°C
Pickup	: 1/4" CCD
Lens	: F 1.8, f = 3.6 to 36 mm, 10:1 Power Zoom Lens
Filter diameter	: ø27 mm
LCD monitor	: 2.5" diagonally measured, LCD panel/TFT active matrix system
Viewfinder	: Electronic viewfinder with 0.55" colour LCD
Speaker	: Monaural

For Digital Video Camera

Format	: DV Format (SD mode)
Signal format	: PAL Standard
Video signal recording format	: Digital Component Recording
Cassette	: Mini DV Cassette
Tape Speed	: SP: 18.8 mm/s LP: 12.5 mm/s
Maximum recording time	: SP: 60 min. LP: 90 min. (using M-DV60ME cassette)

For Digital Still Camera

Storage media	: MultiMediaCard
Compression system	: JPEG (compatible)
Picture quality	: 3 modes (FINE/STANDARD/ECONOMY)
Number of storable images (with the provided MultiMediaCard [4 MB])	
FINE	: Approximately 30
STANDARD	: Approximately 50
ECONOMY	: Approximately 100
Infrared transmitter/receiver	: IrDA Ver. 1.0 (IrTran-P compatible)

For Connectors

Video output	: 1 Vp-p, 75 Ω unbalanced, analogue output (via AV OUT connector)
Audio output	: –8 dBs, 1 kΩ analogue output, stereo (via AV OUT connector)
Headphone output	: ø3.5 mm, stereo (via AV OUT connector)
DV output	: 4-pin, IEEE1394 compliant

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

AC Power Adapter/Charger AA-V50EK

Power requirement : AC 110 V to 240 V∿, 50/60 Hz
Power consumption : 20 W
Output
  Charge : DC 7.2 V ⎓, 0.63 A
  VTR : DC 6.3 V ⎓, 1.8 A
Dimensions : 122 (W) x 39 (H) x 92 (D) mm
Weight : Approx. 380 g

Docking Station CU-V501E

For General

Dimensions : 115 mm (W) x 31 mm (H) x 55 mm (D)
Weight : Approx. 90 g

For Connectors

S-Video : Y: 1Vp-p, 75 Ω, analogue output
C: 0.29 Vp-p, 75 Ω, analogue output
Video : 1Vp-p, 75 Ω, analogue output
Audio : –8 dBs, 1 kΩ, analogue output
JLIP : ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Editing : ø3.5 mm, 2-pole
PC : ø2.5 mm, 3-pole
External microphone input : –68 dBs, high impedance unbalanced with ø3.5 mm (stereo)

E & O.E. Design and specifications subject to change without notice.

SECTION 1
DISASSEMBLY

1.1 BEFORE ASSEMBLY AND DISASSEMBLY

1.1.1 Precautions

1. Be sure to remove the power supply unit prior to mounting and soldering of parts.
2. When connecting and disconnecting the connectors, be careful not to damage the wire.
3. When replacing chip parts (especially IC parts), desolder completely first (to prevent peeling of the pattern).
4. Tighten screws properly during the procedures. Unless specified otherwise, tighten screws at a torque of 0.1N·m (1.0kgf·cm).

1.1.2 Assembly and disassembly

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	1-3-1	(S1) GLIP BELT, COVER (CC)	NOTE 1,2
		1-3-2 1-3-3	2(S2) *CONNECTOR Ⓐ	NOTE3,4,5
②	BOTTOM ASSEMBLY	1-3-4	(S3), 3(S4), (S5), 2(S6) COVER (CARD)	NOTE6

(1) (2) (3) (4) (5)

(1) Indicate the disassembly steps. When assembling, perform in the reverse order of these steps. This number corresponds to the number in the disassembly diagram.

(2) Indicates the name of disassembly/assembly parts.

(3) Indicates the number in the disassembly diagram.

(4) Indicates parts and points such as screws, washers, springs which must be removed during disassembly/assembly.
P = Spring
W = Washer
S = Screw
*Lock (L), soldering (SD), shield, connector, etc.

[Example] • Remove (W1) = Washer W1.
• Remove (SD1) = Soldering at the point SD1.
• Connector Ⓐ = Disconnector the connector Ⓐ.

(5) Precautions on disassembly/assembly.

1.1.3 Disconnection of Connectors (Wires)

Connector
Pull both ends of the connector in the arrow direction, remove the lock and disconnect the flat wire.

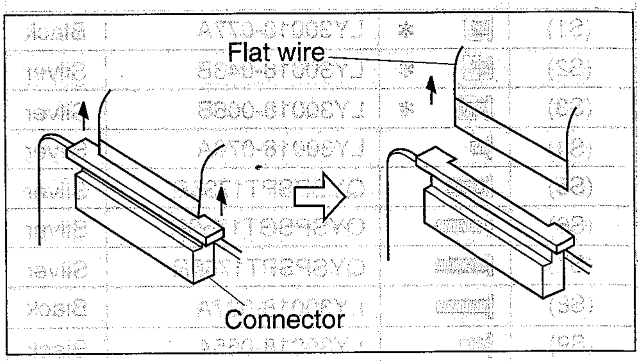


Fig. 1-1-1 Connector 1

Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.

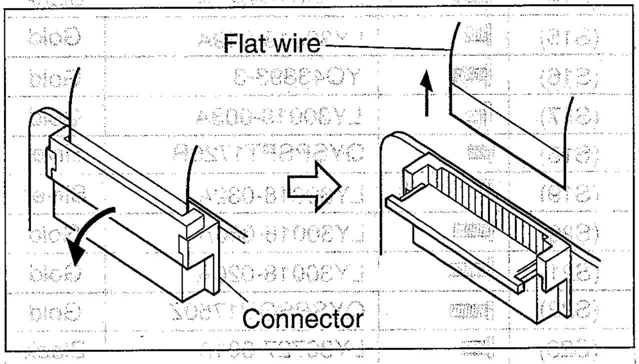


Fig. 1-1-2 Connector 2

B-B Connector
Pull the board by both the sides in the direction of the arrow for disconnecting the B-B connector.

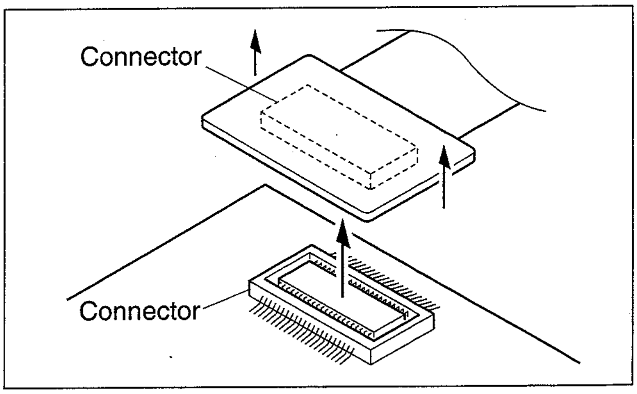


Fig. 1-1-3 Connector 3

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to hose shown in figures of this section "Disassembly".

Symbol	Shape	Parts No.	Color
(S1)	✻	LY30018-077A	Black
(S2)	✻	LY30018-043B	Silver
(S3)	✻	LY30018-006B	Silver
(S4)		LY30018-070A	Silver
(S5)		QYSPSPT1735R	Silver
(S6)		QYSPSGT1750R	Silver
(S7)		QYSPSPT1750R	Silver
(S8)		LY30018-037A	Black
(S9)		LY30018-065A	Black
(S10)		QYSPSPT1725R	Silver
(S11)	✻	LY30018-012A	Silver
(S12)	✻	LY30018-069A	Silver
(S13)		LY30018-018A	Gold
(S14)		LY30018-021A	Black
(S15)		LY30018-049A	Gold
(S16)		YQ43893-3	Gold
(S17)		LY30019-003A	Gold
(S18)		QYSPSPT1720R	Silver
(S19)	✻	LY30018-032A	Silver
(S20)		LY30018-060A	Gold
(S21)		LY30018-020A	Gold
(S22)		QYSPSGU1750Z	Gold
(S23)		LY30727-001A	Black
(S24)		LY30727-002A	Gold

Table 1-1-1

1.2 TOOLS AND EQUIPMENTS REQUIRED FOR ADJUSTMENTS

1.2.1 Tools required for adjustments

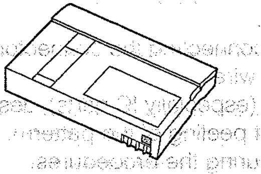
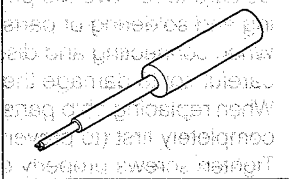
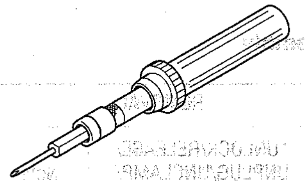
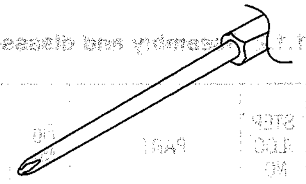
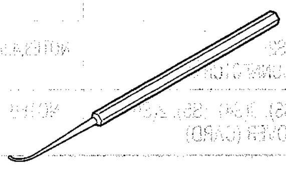
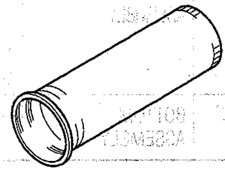
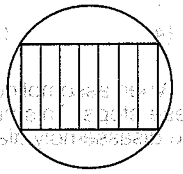
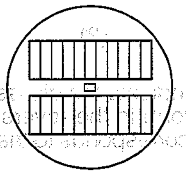
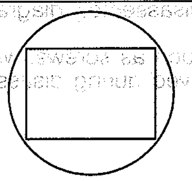
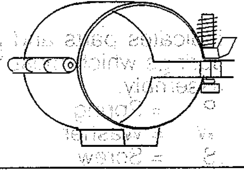
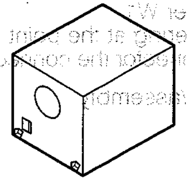
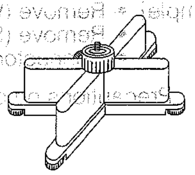
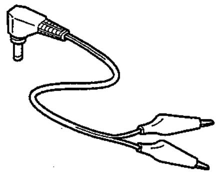
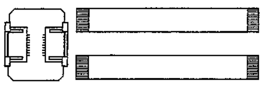
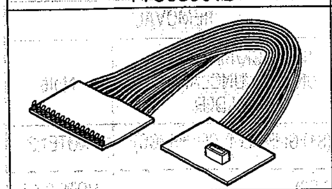
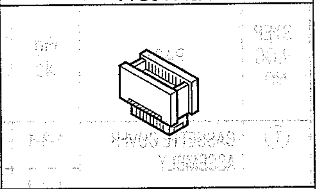
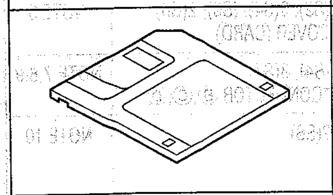
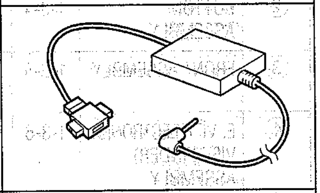
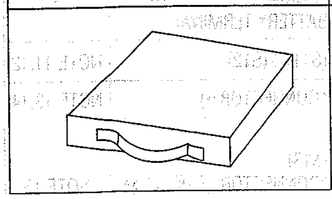
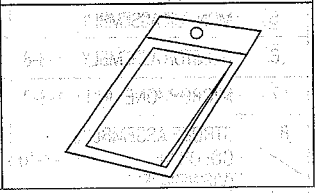
1 ALIGHMENT TAPE MC-2	2 GUIDE DRIVER YTU94148A
	
3 TORQUE DRIVER YTU94088	4 BIT YTU94088-003
	
5 CHIP IC REPLACEMENT JIG PTS40844-2	6 IINF ADJUSTMENT LENS YTU92001B
	
7 COLOR BAR CHART YTU92001-051	8 GRAY SCALE CHART YTU92001-052
	
9 WHITE BALANCE CHART YTU92001-053	10 INF LENSE HOLDER YTU94087
	
11 LIGHT BOX YTU93072A-1	12 CAMERA STAND YTU93079
	
13 POWER SUPPLY JIG YTU94060A	14 PATCH CORD YTU93099A
	

Table 1-2-1

15 JIG CONNECTOR CABLE YTU93091B	16 EXTENSION CONNECTOR YTU94145A
	
17 SERVICE SUPPORT SYSTEM YTU94057-39	18 PC CABLE QAM0099-002
	
19 SOLDERING KIT YTU96016C	20 CLEANING CLOTH KSMM-01
	

1. Alignment tape
   To be used for check and adjustment of interchangeability of the mechanism.

2. Guide driver
   To be used to turn the guide roller to adjustment of the linarity of playback envelope.

3. Torque driver
   Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.

4. Bit
   This bit is slightly longer than those set in conventional torque drivers.

5. Chip IC replacement jig
   To be used for replacing chip IC"s and other chip parts.

6. INF adjustment lens
   To be used for adjustment of the camera system.

7. Color bar chart
   To be used for adjustment of the camera system.

8. Gray scale chart
   To be used for adjustment of the camera system.

9. White balance chart
   To be used for adjustment of the camera system.
   (for white balance adjustment)

10. INF lens holder
    To be used together with the camera stand (11) for operating the VideoMovie in the stripped-down condition such as the status without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring.

11. Light box
    To be used for adjustment of the camera system.

12. Camera stand
    To be used together with the INF adjustment lens holder.

13. Power supply jig
    A jig cable to be used to supply power to the main unit during adjustment.

14. Patch cord
    To be used to connect electrical parts, P.C. boards, etc. for servicing.

15. Jig connector cable
    Connected to CN1010 of the main board and used for measuring error rates, etc.

16. Extension connector
    Connect this extension connector to the connector of the jig connector cable for extending the cable connector.
    Note: *For supplying the power through the coupler by removing the cover (for jig), use this extension connector double for connecting the jig connector cable.*

17. Service support system
    To be used for adjustment with a personal computer.

18. PC cable
    To be used to connect the VideoMovie and a personal computer with each other when a personal computer is used for adjustment.

19. Soldering kit
    Thin head is made so that it can be inserted into small spaces.

20. Cleaning cloth
    Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

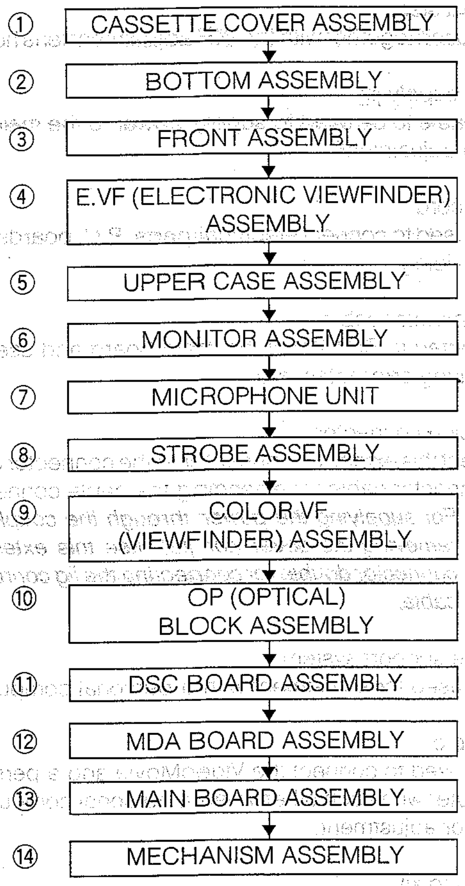
1.2.2 Equipments required for adjustments

1. Parsonal computer (For Windows)
2. Color TV monitor
3. Oscilloscope (dual-trace type, for more than 100 MHz).
4. DIGITAL BOLT meter
5. DC power supply
6. Frequency counter
7. AC Power Adapter/DC Cord
8. Docking station

1.3 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and board assembly in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.



① CASSETTE COVER ASSEMBLY
② BOTTOM ASSEMBLY
③ FRONT ASSEMBLY
④ E.VF (ELECTRONIC VIEWFINDER) ASSEMBLY
⑤ UPPER CASE ASSEMBLY
⑥ MONITOR ASSEMBLY
⑦ MICROPHONE UNIT
⑧ STROBE ASSEMBLY
⑨ COLOR VF (VIEWFINDER) ASSEMBLY
⑩ OP (OPTICAL) BLOCK ASSEMBLY
⑪ DSC BOARD ASSEMBLY
⑫ MDA BOARD ASSEMBLY
⑬ MAIN BOARD ASSEMBLY
⑭ MECHANISM ASSEMBLY

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	1-3-1	(S1) GLIP BELT, COVER (CC)	NOTE1.2
		1-3-2 1-3-3	2(S2) *CONNECTOR Ⓐ	NOTE 3,4,5
②	BOTTOM ASSEMBLY	1-3-4	(S3), 2(S4), (S5), 2(S6) COVER (CARD)	NOTE 6
③	FRONT ASSEMBLY	1-3-5	(S4), 3(S7) *CONNECTOR Ⓑ,Ⓒ,Ⓓ	NOTE 7,8,9
④	E. VF (ELECTRONIC) VIEWFINDER) ASSEMBLY	1-3-6	2(S8)	NOTE 10
⑤/⑥	UPPER CASE ASSEMBLY/ MONITOR ASSEMBLY	1-3-7	(S5), 4(S9), (S10) *CONNECTOR Ⓔ,Ⓕ,Ⓖ BATTERY TERMINAL	–
⑥	MONITOR ASSEMBLY	1-3-8	(S11), 2(S12)	NOTE 11,12
⑦	MICROPHONE UNIT	1-3-9	*CONNECTOR Ⓗ	NOTE 13,14
⑧/⑨/⑩	STROBE ASSEMBLY COLOR VF (VIEWFINDER) ASSEMBLY OP (OPTICAL) BLOCK ASSEMBLY	1-3-10	(S13) *CONNECTOR Ⓙ,Ⓚ,Ⓛ,Ⓜ	NOTE 15
⑧	STROBE ASSEMBLY	1-3-11	(S14)	–
⑨	COLOR VF (VIEWFINDER) ASSEMBLY	1-3-12	(S13), (L1), (L2), (L3), 2(L4)	NOTE 16,17
⑩	OP (OPTICAL) BLOCK ASSEMBLY	1-3-13	(S13) OP COVER (LOWER)	NOTE 18,19
⑪	DSC BOARD ASSEMBLY	1-3-14	(S15), (L5), (L6) *CONNECTOR Ⓝ	NOTE 20
⑫	MDA BOARD ASSEMBLY	1-3-15	(S15), (L7), 2(L8), 2(L9) *CONNECTOR Ⓞ,Ⓟ,Ⓠ Ⓡ,Ⓢ	NOTE 21,22
⑬	MAIN BOARD ASSEMBLY	1-3-16	2(S16), (L10), (L11) *CONNECTOR Ⓣ,Ⓤ SHILD COVER, BRACKET1	–
⑭	MECHANISM ASSEMBLY	1-3-17	2(S17), (L12), (L13) BRACKET1,2	–

List of Abbreviations: (S1)=Screw (S1)
4(L1)=4 Locking Tabs (L1)

① Cassette cover assembly

1. Remove the grip belt (front side).
2. Remove the cover (CC).

Note 1: *Carefully remove and handle the cover (CC), because it should be reused.*

3. Open the cassette cover assembly and remove one screw (1). Proceed to the following steps with the cassette cover assembly being held open.

Note 2: *After the screw (1) was once removed, don't reuse it because it is a special loose-free screw.*

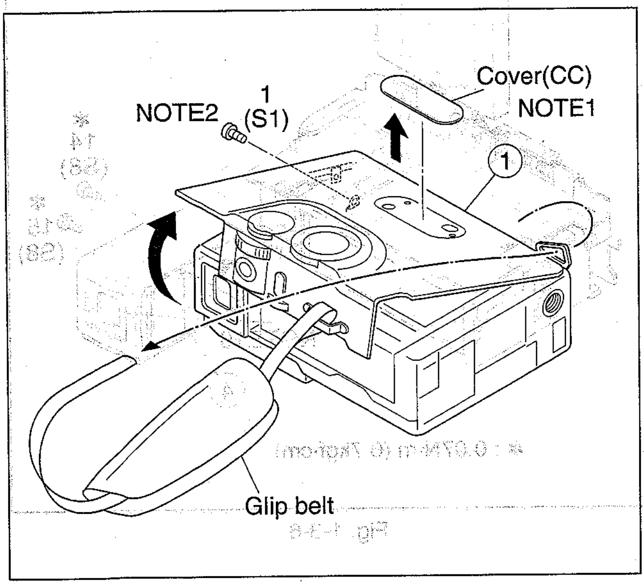

Cover(CC)
NOTE1
NOTE2
1
(S1)
1
Glip belt

Fig. 1-3-1

4. Remove two screws (2, 3), and then remove the cassette cover assembly as the connector A is still in connection. For the removing manner, refer to Fig. 1-3-2.

Note 3: *After the screws (2, 3) were once removed, don't reuse them because they are special loose-free screws.*

Note 4: *When removing the cassette cover assembly, perform the work very carefully not to damage the switch by the bracket mounted on the back of the cassette cover assembly.*

Note 5: *Be very careful not to damage or deform the frame. Hold the frame retracted through the removing work.*

5. Release the stopper of the connector A from locking and pull the FPC out of the connector. Then remove the cassette cover assembly.

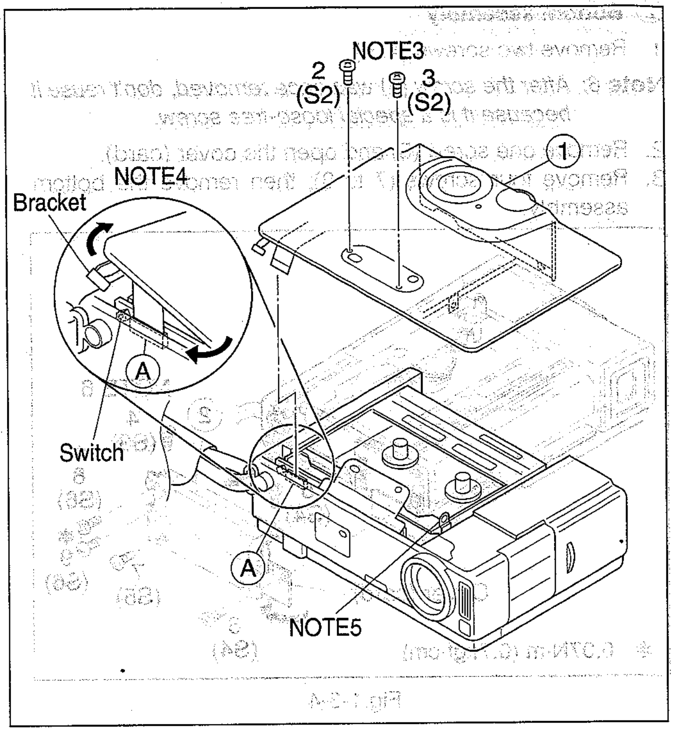
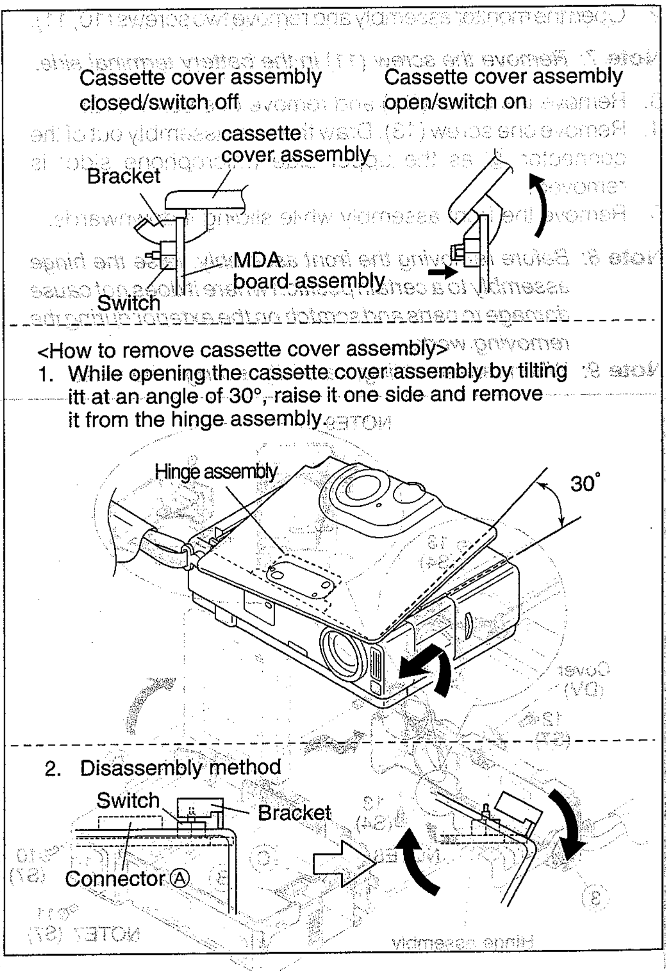

NOTE3
2
(S2)
3
(S2)
1
NOTE4
Bracket
A
Switch
A
NOTE5

Fig. 1-3-2


Cassette cover assembly closed/switch off
Cassette cover assembly open/switch on
cassette cover assembly
Bracket
MDA board assembly
Switch
Hinge assembly
30°
Switch
Bracket
Connector Ⓐ

<How to remove cassette cover assembly>

1. While opening the cassette cover assembly by tilting itt at an angle of 30°, raise it one side and remove it from the hinge assembly.
2. Disassembly method

Fig. 1-3-3

② Bottom assembly

1. Remove two screws (4, 5).

Note 6: *After the screw (4) was once removed, don't reuse it because it is a special loose-free screw.*

2. Remove one screw (6) and open the cover (card).
3. Remove four screws (7 to 9), then remove the bottom assembly.

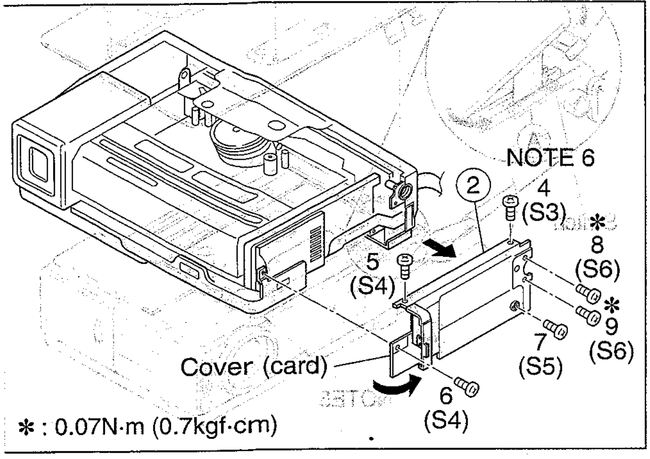


Fig.1-3-4

③ Front assembly

1. Release the stoppers of the connectors Ⓑ and Ⓒ from locking and then pull the FPC from the connectors.
2. Open the monitor assembly and remove two screws (10, 11).

Note 7: *Remove the screw (11) in the battery terminal side.*

3. Remove the cover (DV) and remove one screw (12).
4. Remove one screw (13). Draw the wire assembly out of the connector Ⓓ as the upper side (microphone side) is removed.
5. Remove the front assembly while sliding it downwards.

Note 8: *Before removing the front assembly, raise the hinge assembly to a certain position where it does not cause damage to parts and scratch on the exterior during the removing work.*

Note 9: *When reassembling, carefully arrange the wires.*

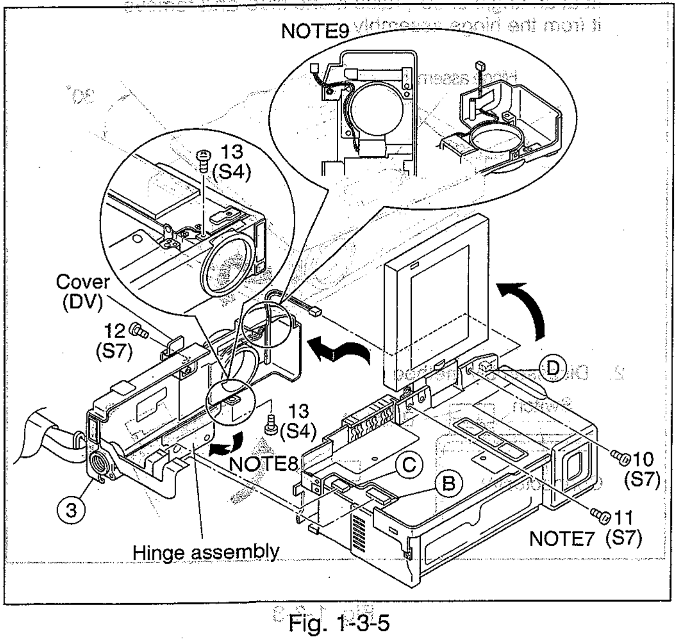


Fig. 1-3-5

④ E. VF (electronic viewfinder) assembly

1. Draw out the electronic viewfinder (E. VF) assembly and remove two screws (14, 15). Draw the E. VF assembly furthermore to remove it completely.

Note 10: *When reassembling the E. VF assembly, to the cabinet, check to see if there is neither dust nor stain on the VF screen and lens surface. Clean the lens surface and screen depending on the situation.*

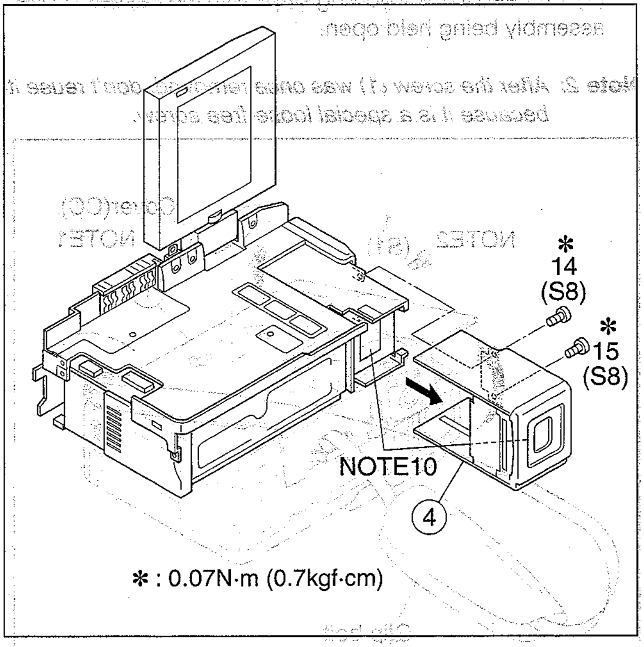


Fig. 1-3-6

⑤ Upper case assembly / ⑥ Monitor assembly

1. Remove one screw (16), release the stopper of the connector Ⓔ from locking as the battery terminal is shifted aside, and then pull the FPC out of the connector.
2. Remove four screws (17 to 20).
3. Turn the monitor assembly and remove one screw (21).
4. While lifting up the upper case assembly by the door lock switch side, release the stopper of the connector Ⓕ from locking and then pull the FPC from the connector. Shifting the upper case assembly to the front side, pull the wires of the W/B board assembly out of the groove and disconnect the wires from the connector Ⓖ. Then, remove the upper case assembly.

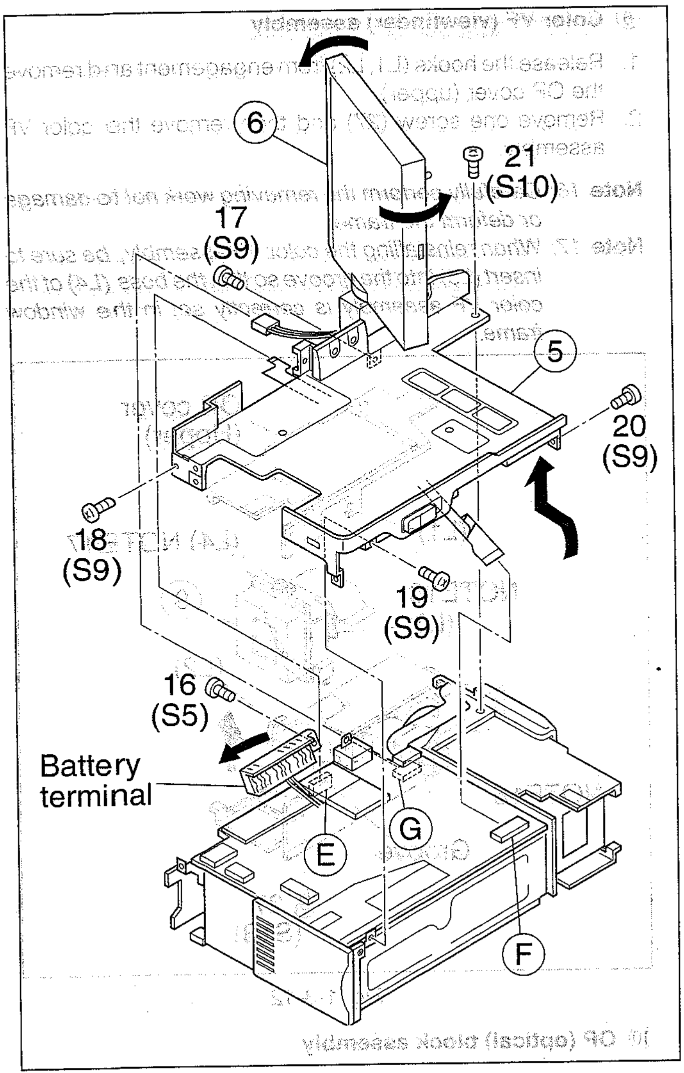

6
21
(S10)
17
(S9)
5
20
(S9)
18
(S9)
19
(S9)
16
(S5)
Battery terminal
E
G
F

Fig. 1-3-7

⑥ **Monitor assembly**

1. Open the monitor assembly and remove one screw (22).
2. Remove two screws (23, 24) and then remove the monitor assembly.

Note *11: After the screws (22 to 24) were once removed, don't reuse them because they are special loose-free screws.*

Note *12: For disassembling the monitor assembly, refer to "1.4 DISASSEMBLY/ASSEMBLY OF MONITOR ASSEMBLY".*

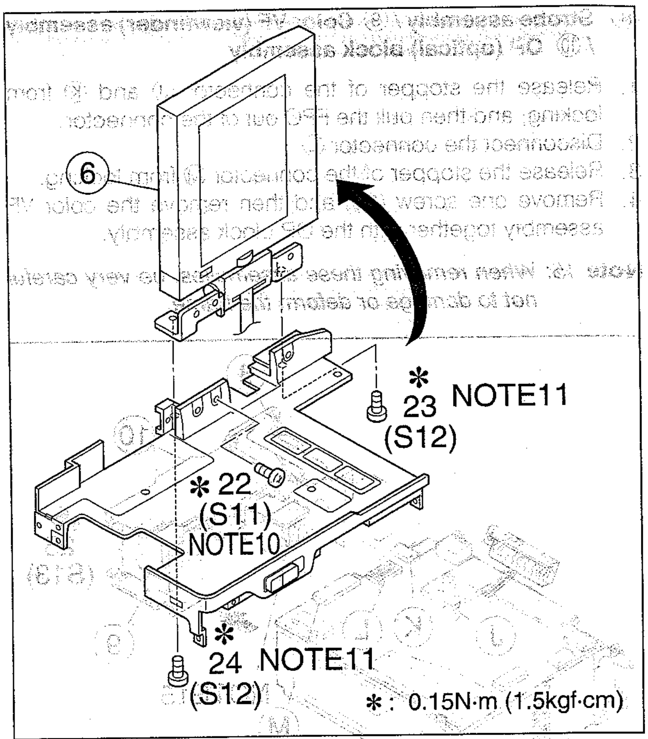

6
* 23 NOTE11
(S12)
* 22
(S11)
NOTE10
* 24 NOTE11
(S12)
*: 0.15N·m (1.5kgf·cm)

Fig. 1-3-8

⑦ **Microphone unit**

1. Disconnect all the wires arranged on the board (MDA PWB) to make the microphone unit free. Then, pull the wires out of the connector Ⓗ and remove the microphone unit.

Note *13: When reinstalling the microphone unit, carefully arrange all the wires as they were.*

Note *14: Be careful not to get an electric shock from C6512.*

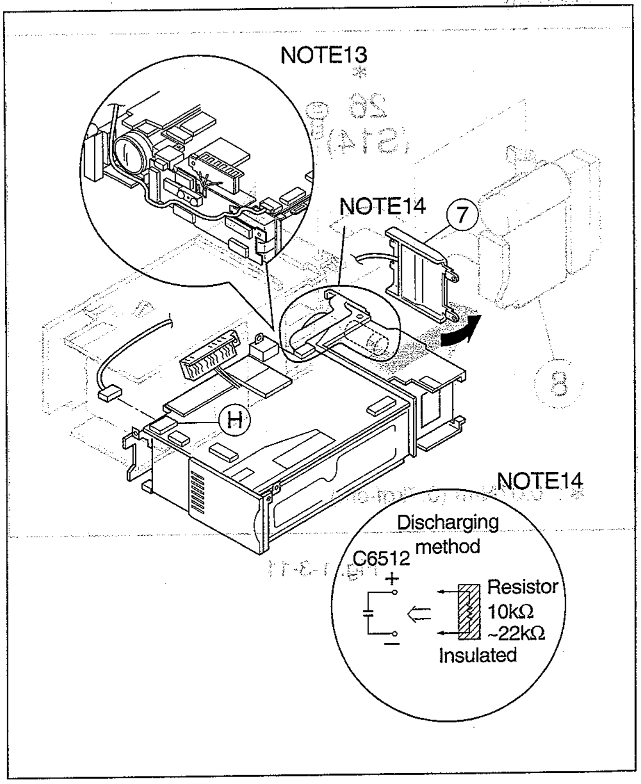

NOTE13
NOTE14
7
H
NOTE14
Discharging method
C6512
+
−
Resistor
10kΩ
~22kΩ
Insulated

Fig. 1-3-9

Strobe assembly / ⑨ Color VF (viewfinder) assembly / ⑩ OP (optical) block assembly

. Release the stopper of the connector Ⓙ and Ⓚ from locking, and then pull the FPC out of the connector.

:. Disconnect the connector Ⓛ.

;. Release the stopper of the connector Ⓜ from locking.

.. Remove one screw (25) and then remove the color VF assembly together with the OP block assembly.

ote *15: When removing these assemblies, be very careful not to damage or deform the frame.*

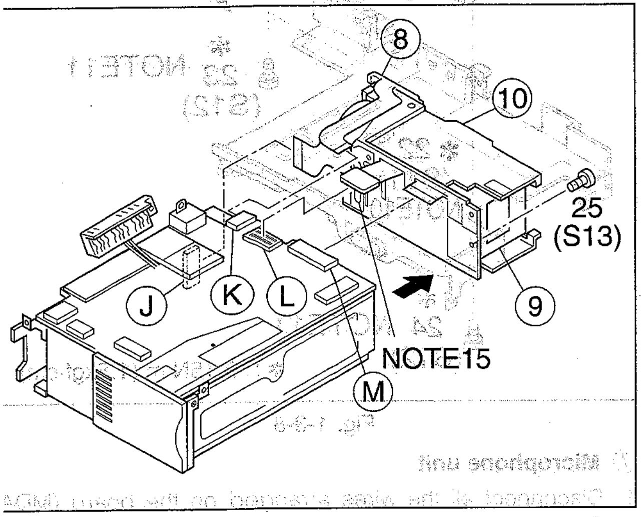
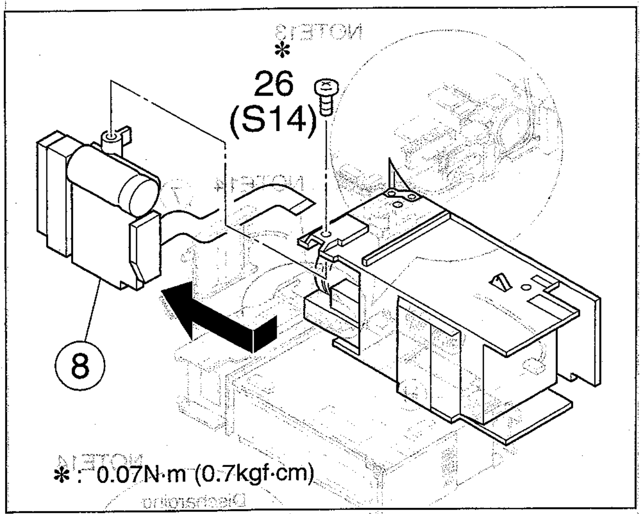


Fig. 1-3-10

⑧ Strobe assembly

1. Remove one screw (26) and then remove the strobe assembly.



*: 0.07N·m (0.7kgf·cm)

Fig. 1-3-11

⑨ Color VF (viewfinder) assembly

1. Release the hooks (L1, L2) from engagement and remove the OP cover (upper).
2. Remove one screw (27) and then remove the color VF assembly.

Note *16: Carefully perform the removing work not to damage or deform the frame.*

Note *17: When reinstalling the color VF assembly, be sure to insert (L3) into the groove so that the boss (L4) of the color VF assembly is correctly set in the window frame.*

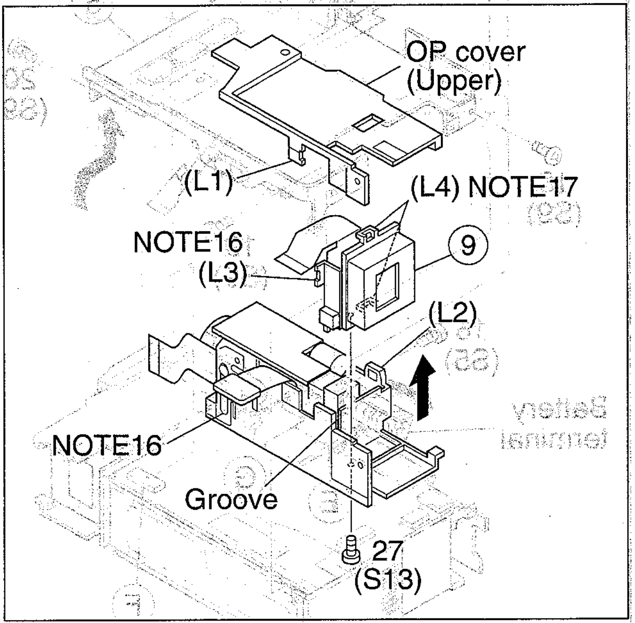


Fig. 1-3-12

⑩ OP (optical) block assembly

1. Remove one screw (28) and then remove the OP block assembly.

Note *18: Carefully perform the removing work not to damage or deform the frame.*

Note *19: For disassembling the OP block assembly, refer to "1.5 DISASSEMBLY/ASSEMBLY OF OP BLOCK ASSEMBLY".*

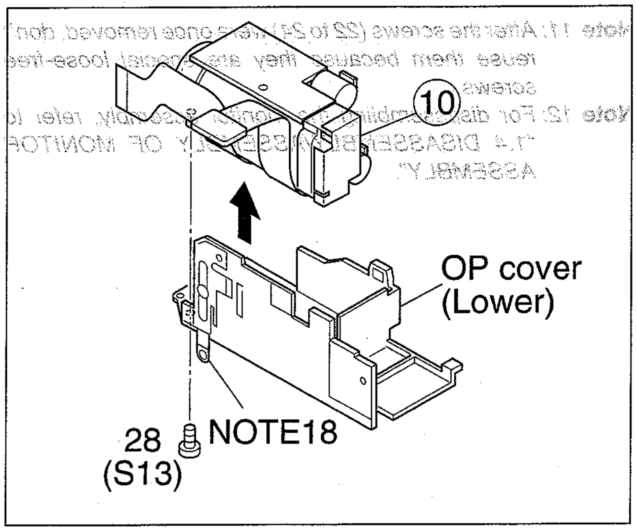


Fig. 1-3-13

⑪ DSC board assembly

1. Disconnect the connector Ⓝ.
2. Remove one screw (29) and the remove the DSC board assembly.

Note 20: *Pay careful attention to the parts not to damage any of them during the mark.*

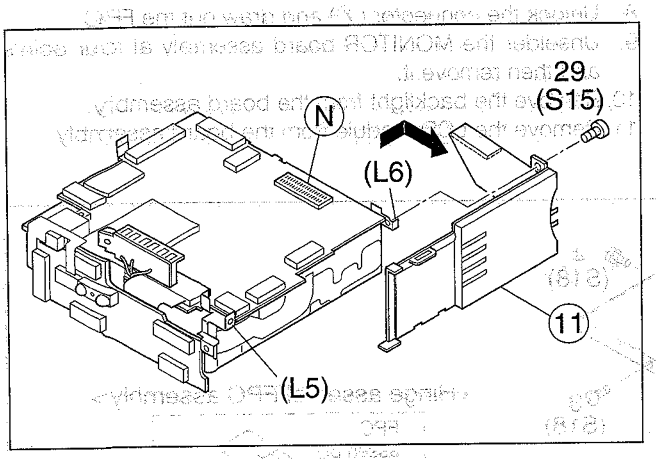
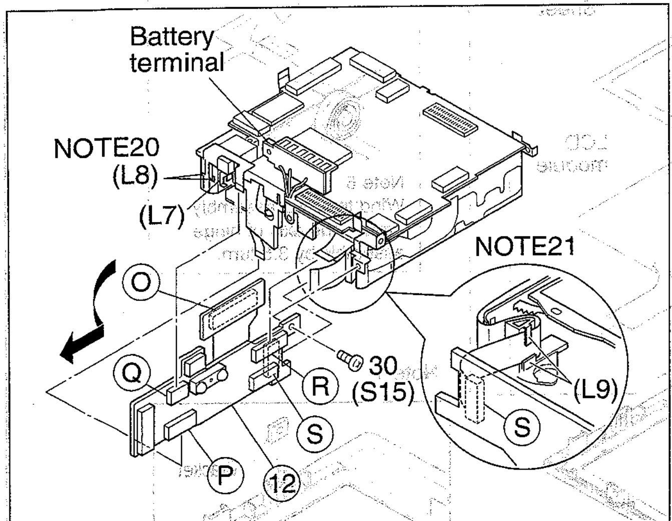


Fig. 1-3-14

⑫ MDA board assembly

1. Remove one screw (30).
2. Disconnect the connector Ⓞ and move it to the front of the battery terminal.
3. Release the stoppers of the connectors Ⓟ and Ⓠ from locking and then pull the FPC out of the connectors.
4. Release the stopper of the connector Ⓡ from locking, then pull the FPC from the connector while disengaging the board assembly from the hook (L7).
5. While holding the board assembly open, release the stopper of the connector Ⓢ from locking and pull the FPC out of the connector. Then, remove the MDA board assembly.



Note *20: When reassembling, fasten the FPC wire by the hook (L8) of the motor bracket.*

Note *21: When reassembling, fasten the FPC wire by the hook (L9) of the catcher (T) assembly.*

Fig. 1-3-15

⑬ MAIN board assembly

1. Remove two screws (31, 32) and remove the shield cover.
2. Release the stoppers of the connectors Ⓢ and Ⓣ from locking and pull the FPC out of the connectors.
3. Unhook (L10) and (L11) in this order, and then remove the MAIN board assembly while disengaging it from the bracket 1 of the mechanism assembly.

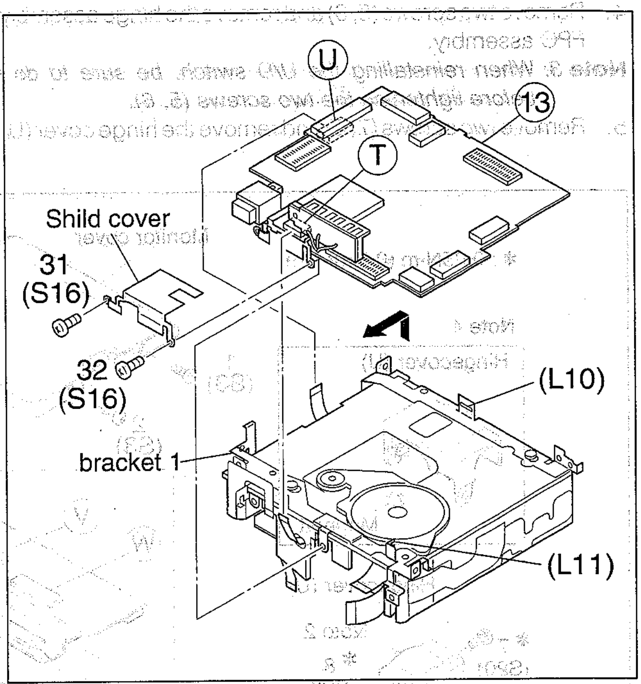


Fig. 1-3-16

⑭ Mechanism assembly

1. Remove one screw (33) and remove the bracket 1.
2. Remove one screw (34) and remove the bracket 2.
   As a result, the mechanism assembly can be removed.

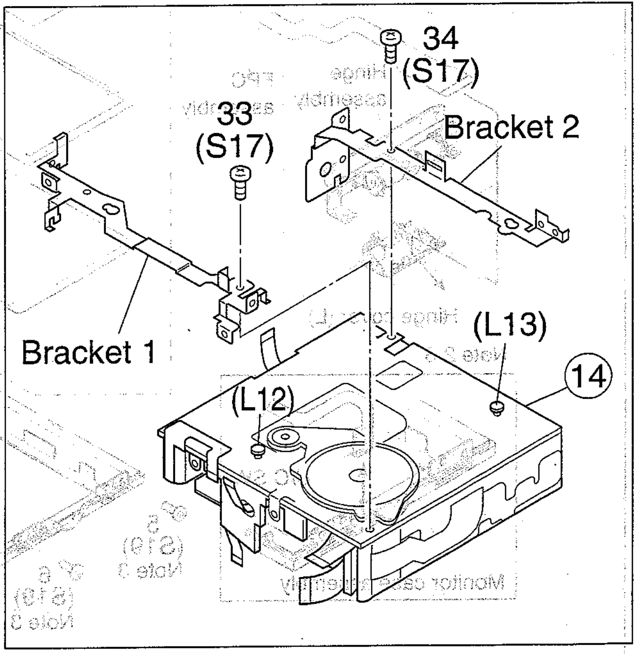


Fig. 1-3-17

1.4 DISASSEMBLY/ASSEMBLY OF MONITOR ASSEMBLY

1. Remove four screws (1 to 4) and remove the monitor cover.

Note *1: Pay heed to the bracket not to lose it.*

2. Draw the U/D switch out of the monitor case assembly.

Note *2: Pay heed to the FPC wire not to damage it.*

3. Unlock two connectors (Ⓥ, Ⓦ) and draw out the FPC.
4. Remove two screws (5, 6) and remove the hinge assembly/ FPC assembly.

Note *3: When reinstalling the U/D switch, be sure to do it before tightening the two screws (5, 6).*

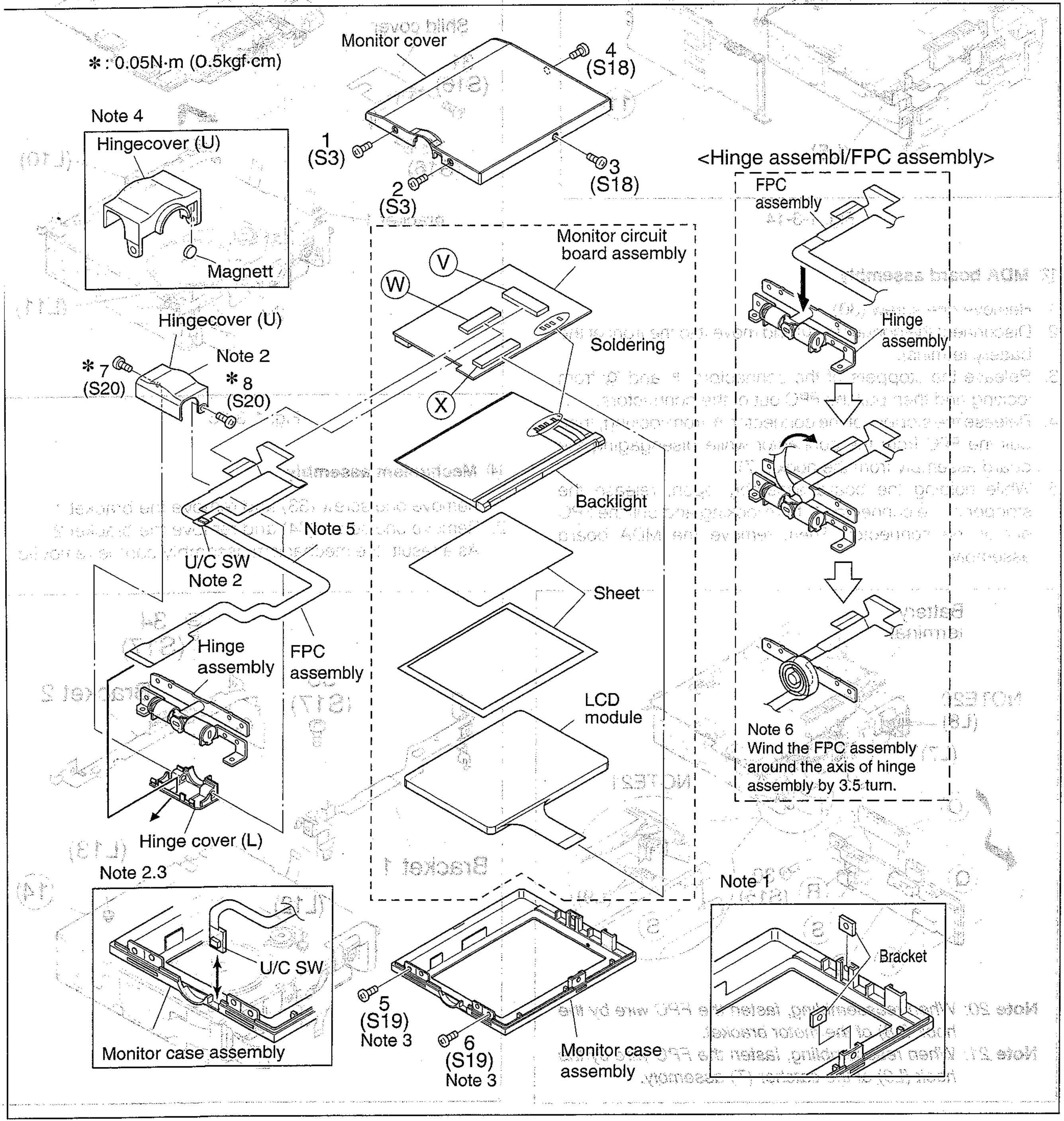
5. Remove two screws (7, 8) and remove the hinge cover (U).

Note *4: Pay heed to the magnet not to lose it during disassembling.*

6. Remove the hinge cover (L) and draw out the FPC assembly.
7. Remove the FPC assembly from the hinge assembly.

Note *5: Carefully remove the FPC assembly not to break its wires.*

8. Unlock the connector (Ⓧ) and draw out the FPC.
9. Unsolder the MONITOR board assembly at four points and then remove it.
10. Remove the backlight from the board assembly.
11. Remove the LCD module from the board assembly.



＊: 0.05N·m (0.5kgf·cm)
Monitor cover
4 (S18)
1 (S3)
2 (S3)
3 (S18)
Note 4
Hingecover (U)
Magnett
<Hinge assembl/FPC assembly>
FPC assembly
Hinge assembly
Monitor circuit board assembly
V
W
X
Soldering
Backlight
Hingecover (U)
Note 2
＊7 (S20)
＊8 (S20)
Note 5
U/C SW
Note 2
Sheet
Hinge assembly
FPC assembly
LCD module
Note 6
Wind the FPC assembly around the axis of hinge assembly by 3.5 turn.
Hinge cover (L)
Note 2.3
U/C SW
Monitor case assembly
5 (S19) Note 3
6 (S19) Note 3
Monitor case assembly
Note 1
Bracket

Fig. 1-4-1

1.5 DISASSEMBLY/ASSEMBLY OF OP BLOCK

1.5.1 Replacing CCD image sensor

Precautions

1. Through the disassembling/reassembling work, pay the most careful attention to the CCD image sensor, optical LPF, lenses, particularly to their respective surfaces not to get them dusty, soiled, or damaged. If some of them is soiled with fingerprints, etc., wipe them out with the specified cleaning cloth (Part No. KSMM-01), silicone paper, clean chamois, or the like.
2. The CCD image sensor is occasionally shipped in the status that a protection seal is stuck onto its transparent glass. In such the case, leave the protection seal as it is and remove it just before assembling the new CCD image sensor to the OP block for replacement.

Removing CCD image sensor from OP block assembly

Note 1: *When the shield case is setting, remove it before the fix.*

1. Unsolder the shield case at two points and remove it.
2. Unsolder the CCD base assembly at fourteen points.
3. Remove three screws (1 to 3) and remove the CCD board assembly.

Note 2: *The CCD image sensor can be removed for replacement by removing two screws (2, 3) only. However, it is recommended to remove the other screw (1) together with them for removing the CCD board assembly taking it structure into consideration. That is to say, the CCD image sensor can be easily replaced in the condition that the CCD board assembly is removed together from the OP block.*

4. Remove the CCD base assembly.
5. Remove the optical LPF and spacer rubber.

Assembly

1. As the optical LPF is fitted with the spacer rubber, set it in the center of the OP block assembly.

Note 3: *When setting the optical LPF, carefully distinguish between its front side and back side in order to set it in correct orientation.*

2. Check that the optical LPF is correctly positioned. Then, fit the CCD base assembly to the OP block assembly and fasten it with two screws.
3. Fit the CCD board assembly to the OP block assembly and fasten it with one screw.
4. Solder fourteen terminals of the CCD base assembly to the CCD board assembly.
5. Set the shield case and solder it by two points.

1.5.2 Replacing service parts

Precautions

1. The following parts are registered as replaceable service parts of the OP block.
   - Focus motor
   - Zoom motor
   - Iris motor unit (Note 4)

Note 4: *The iris motor unit includes a FPC and two sensors. When replacing the iris motor unit, be very careful neither to break the FPC wires nor to damage the unit by overheating during soldering.*

2. After replacement of the focus motor and/or zoom motor, carry out the required adjustments with a personal computer.
3. When soldering the FPC terminals after replacement of the focus motor and/or zoom motor, hold the FPC at a level 1 mm above the terminal base.

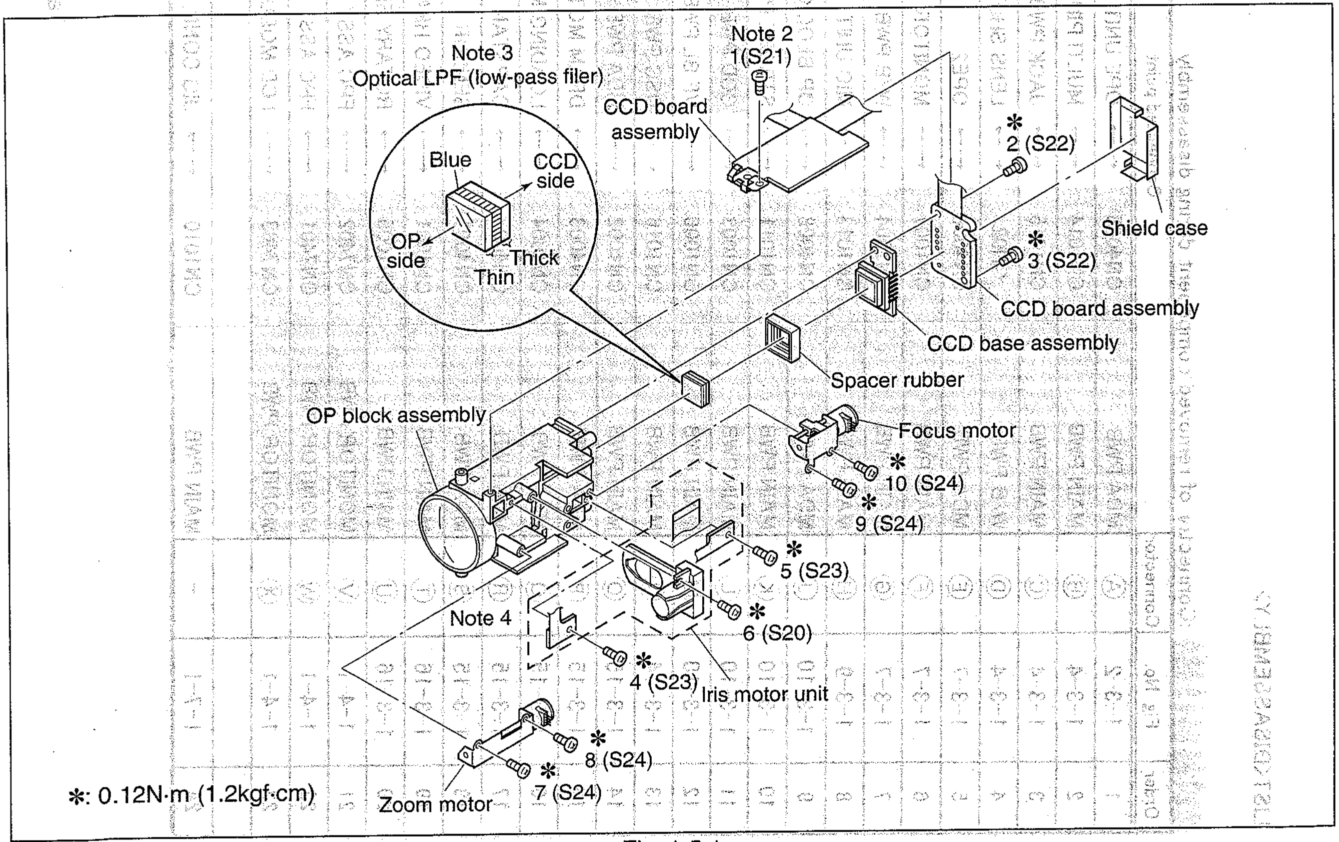


Fig. 1-5-1

1.6 CONNECTION OF CONNECTORS

LIST<DISASSEMBLY>

▨ :Connector of removed component during disassembly

Order	Fig. No.	Connector	Connected point					Number of pin	Class	Patch cord
1	1-3-2	Ⓐ	MDA PWB	CN4005	←→	OPE UNIT	-	27	FPC	YTU94109-27 / YTU94129A-27
2	1-3-4	Ⓑ	MAIN PWB	CN1014	←→	MULTI PIN CONN	-	33	FPC	YTU94109-33 / YTU94129A-33
3	1-3-4	Ⓒ	MAIN PWB	CN1015	←→	JACK PWB	-	8	FPC	YTU94077-8 / YTU94074-8
4	1-3-4	Ⓓ	W/B PWB	CN92	←→	LENS SHUT UNIT	-	2	WIRE	NC
5	1-3-7	Ⓔ	MDA PWB	CN4008	←→	OPE2	-	6	FPC	NC
6	1-3-7	Ⓕ	MAIN PWB	CN1007	←→	MONITOR ASSY	-	39	FPC	YTU94109-39 / YTU94129A-39
7	1-3-7	Ⓖ	MAIN PWB	CN1004	←→	W/B PWB	-	6	WIRE	DIRECT
8	1-3-9	Ⓗ	MAIN PWB	CN1013	←→	MIC UNIT	-	3	WIRE	DIRECT
9	1-3-10	Ⓙ	MDA PWB	CN4006	←→	OP BLOCK	-	22	FPC	YTU94077-22 / YTU94074-22
10	1-3-10	Ⓚ	MAIN PWB	CN1011	←→	STROBE PWB	CN6501	12	FPC	NC
11	1-3-10	Ⓛ	MAIN PWB	CN1003	←→	CCD PWB	CN5001	30	B-B	DIRECT
12	1-3-10	Ⓜ	MAIN PWB	CN1006	←→	VF BL PWB	CN7650	22	FPC	YTU94077-22 / YTU94074-22
13	1-3-14	Ⓝ	MAIN PWB	CN1016	←→	DSC PWB	CN8002	80	B-B	DIRECT
14	1-3-15	Ⓞ	MAIN PWB	CN1002	←→	MDA PWB	CN4007	80	B-B	DIRECT
15	1-3-15	Ⓟ	MDA PWB	CN4003	←→	DRAM MOTOR	-	11	FPC	DIRECT
16	1-3-15	Ⓠ	MDA PWB	CN4004	←→	LOADING MOTOR	-	6	FPC	DIRECT
17	1-3-15	Ⓡ	MDA PWB	CN4002	←→	CAPSTAN MOTOR	-	18	FPC	DIRECT
18	1-3-15	Ⓢ	MDA PWB	CN4001	←→	SENSOR	-	15	FPC	DIRECT
19	1-3-16	Ⓣ	MAIN PWB	CN1001	←→	VIDEO HEAD	-	8	FPC	DIRECT
20	1-3-16	Ⓤ	MAIN PWB	CN1005	←→	ROTARY ENCODER	-	6	FPC	YTU94077-6 / YTU94074-6
21	1-4-1	Ⓥ	MONITOR PWB	CN7402	←→	FPC ASSY	-	26	FPC	DIRECT
22	1-4-1	Ⓦ	MONITOR PWB	CN7401	←→	FPC ASSY	-	22	FPC	DIRECT
23	1-4-1	Ⓧ	MONITOR PWB	CN7403	←→	LCD MODULE	-	24	FPC	DIRECT
24	1-7-1	-	MAIN PWB	CN1010	←→	JIG CONN.	-	20	B-B	YTU93091B (JIG CONNECTOR CABLE)

Table 1-6-1

1.7 CONNECTION OF CONNECTORS (PATCH CORDS) LIST

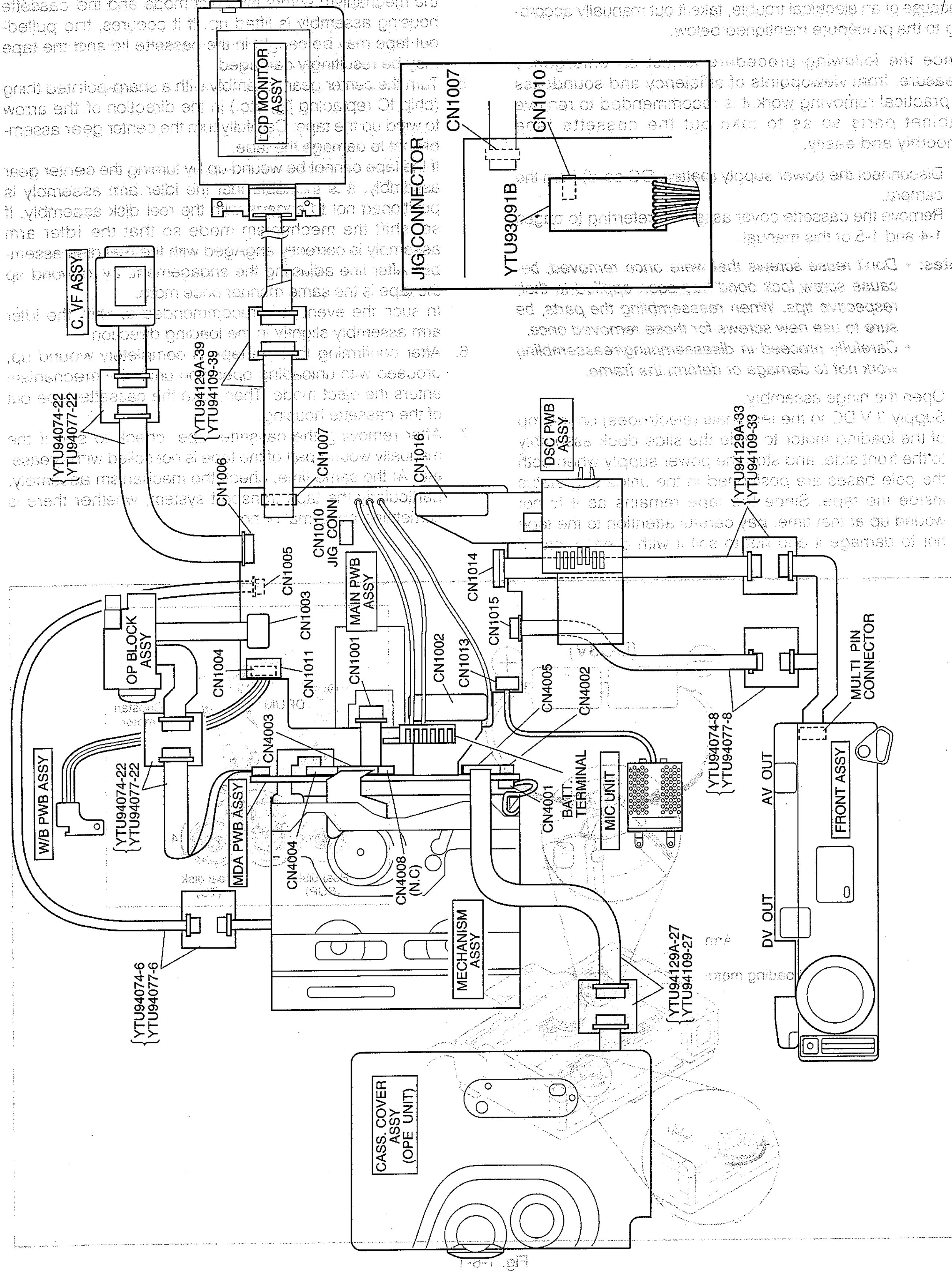

LCD MONITOR ASSY
JIG CONNECTOR
CN1007
CN1010
YTU93091B
C. VF ASSY
YTU94129A-39
YTU94109-39
YTU94074-22
YTU94077-22
CN1006
CN1007
CN1016
DSC PWB ASSY
YTU94129A-33
YTU94109-33
CN1010
JIG CONN.
CN1005
CN1014
MAIN PWB ASSY
CN1003
CN1015
OP BLOCK ASSY
CN1004
CN1011
CN1001
CN1002
CN1013
CN4005
CN4002
MULTI PIN CONNECTOR
YTU94074-8
YTU94077-8
CN4003
W/B PWB ASSY
YTU94074-22
YTU94077-22
MDA PWB ASSY
CN4004
CN4008 (N.C)
CN4001
BATT. TERMINAL
MIC UNIT
AV OUT
FRONT ASSY
DV OUT
MECHANISM ASSY
YTU94074-6
YTU94077-6
YTU94129A-27
YTU94109-27
CASS. COVER ASSY (OPE UNIT)

Fig. 1-7-1

1.8 HOW TO TAKE OUT CASSETTE TAPE MANUALLY

On the occasion that the cassette tape cannot be ejected because of an electrical trouble, take it out manually according to the procedure mentioned below.

Since the following procedure is just an emergency measure, from viewopoints of efficiency and soundness of practical removing work it is recommended to remove cabinet parts so as to take out the cassette tape smoothly and easily.

1. Disconnect the power supply (battery/DC cord) from the camera.
2. Remove the cassette cover assembly referring to pages 1-4 and 1-5 of this manual.

Notes: • *Don't reuse screws that were once removed, because screw lock bond had been applied to their respective tips. When reassembling the parts, be sure to use new screws for those removed once.*
• *Carefully proceed in disassembling/reassembling work not to damage or deform the frame.*

3. Open the hinge assembly.
4. Supply 3 V DC to the terminals (electrodes) on the top of the loading motor to slide the slide deck assembly to the front side, and stop the power supply when both the pole bases are positioned in the unloading status inside the tape. Since the tape remains as it is not wound up at that time, pay careful attention to the tape not to damage it and not to soil it with grease, etc. If unloading operation is continued after both the pole bases return to their respective positions inside the tape, the mechanism enters the eject mode and the cassette housing assembly is lifted up. If it occures, the pulled-out tape may be caught in the cassette lid and the tape may be resultingly damaged.
5. Turn the center gear assembly with a sharp-pointed thing (chip IC replacing jig, etc.) in the direction of the arrow to wind up the tape. Carefully turn the center gear assembly not to damage the tape.
   If the tape cannot be wound up by turning the center gear assembly, it is thinkable that the idler arm assembly is positioned not to engage with the reel disk assembly. If so, shift the mechanism mode so that the idler arm assembly is correctly engAged with the reel disk assembly. After fine adjusting the engagement, try to wond up the tape is the same manner once more.
   In such the event, it is recommended to shift the idler arm assembly slightly in the direction of the loading direction.
6. After confirming that the tape is completely wound up, proceed with unloading operation until the mechanism enters the eject mode. Then, take the cassette tape out of the cassette housing.
7. After removing the cassette tape, check to see if the manually wound part of the tape is not soiled with grease, etc. At the same time, check the mechanism assembly, particularly the tape transport system, whether there is something abnormal or not.

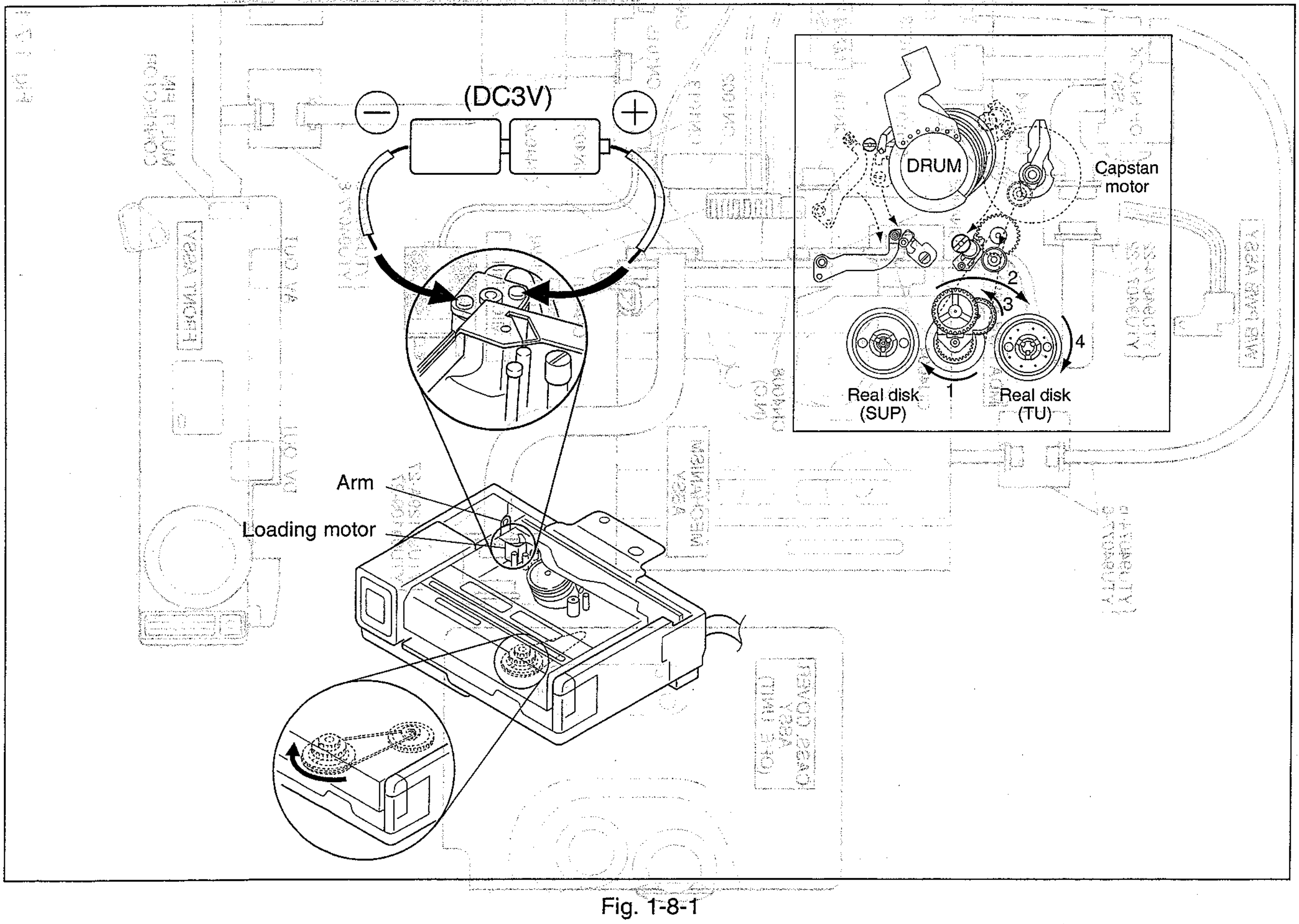


Fig. 1-8-1

1.9 SERVICE NOTE

Screw Management Table

Part No.→	①			②						③				④		⑤／⑥					
Removing order of screw→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Place to stick screw→	*	*	*	*																	
Reference drawing→	1-3-1	1-3-2		1-3-4						1-3-5				1-3-6		1-3-7					
Screw tightening torque→	I	I	I	I	I	I	I	II	II	I	I	I	I	II	II	I	I	I	I	I	I

Part No.→	⑥			⑦	⑧／⑨／⑩	⑧	⑨	⑩	⑪	⑫	⑬		⑭	
Removing order of screw→	22	23	24	—	25	26	27	28	29	30	31	32	33	34
Place to stick screw→	*	*	*											
Reference drawing→	1-3-8			1-3-9	1-3-10	1-3-11	1-3-12	1-3-13	1-3-14	1-3-15	1-3-16		1-3-17	
Screw tightening torque→	III	III	III	—	I	II	I	I	I	I	I	I	I	I

Part No.→	⑥ MONITOR ASSEMBLY								⑩ OP BLOCK ASSEMBLY									
Removing order of screw→	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9	10
Place to stick screw→					*	*												
Reference drawing→	1-4-1								1-5-1									
Screw tightening torque→	I	I	I	I	I	I	IV	IV	I	V	V	V	V	V	V	V	V	V

NOTE

1) * : Scew which screw lock bond is applied to. Don't reuse any marked with * if it was once removed.
Be sure to replace it with new one each time screwing it.

2) Pay careful attention to tightening torque for each screw.

I : 0.1N·m(1.0kgf·cm)
II : 0.07N·m(0.7kgf·cm)
III : 0.15N·m(1.5kgf·cm)
IV : 0.05N·m(0.5kgf·cm)
V : 0.12N·m(1.2kgf·cm)

Table 1-9-1

1.10 REGARDING STROBE LIGHT EMITTING CAPACITOR

Warning against electric shock!!

If the strobe light emitting capacitor (C6512 on the STROBE board assembly) is charged, it may cause an electric shock during disassembling. Before proceeding to inspection and service of the set, check the charge status of this capacitor. When it has been charged, be sure to discharge it forcibly before proceeding to service job.

For discharging method, refer to Fig. 1-3-9 on page 1-7.

1.11 PRECAUTIONS ON HANDLING THE LITHIUM SECONDARY BATTERY

This unit is equipped with a button-type lithium secondary battery. Improper handling of this battery may cause heat to be generated, damaged, fires or leakage. Always follow the precautions below.

① Be sure not to shortcircuit, disassemble, deform and heat it.
② Carefully set the lithium battery so that its positive and negative poles are correctly connected respectively.
③ Don't solder anything directly to the lithium battery.
④ When replacing the lithium battery, be sure to do it with correct one referring to the part number appearing in the parts list of the manual.
⑤ When keeping the lithium battery, avoid direct sunlight, high temperature and high humidity.
⑥ When replacing the lithium battery, avoid using metallic tools such as tweezers, etc. for picking it up because such the tool may cause shortcircuit.
⑦ When disposing the lithium battery, cover the electrodes with adhesive tape or the like for insulation.

1.12 EMERGENCY DISPLAY

When there is something abnormal with this Digital VideoMovie during operation, an error number (Example: E01) representing the trouble appears on the LCD monitor.

LCD display	Emergency mode	Symptom	Survellance mode	Mode to shsift
E01	LOADING	The mechanism does not shift to the next mode (in the LOADING direction) though it has passed more than 4 seconds after the mechanism was required to do it.	LOADING	Mode continues
E02	UNLOADING	The mechanism does not shift to the next mode (in the UNLOADING direction) though it has passed more than 4 seconds after the mechanism was required to do it.	UNLOADING	Mode continues
E03	REEL FG	No REEL FG (TU or SUP) signal is input for more than 4 seconds in the mode that the reel must rotate.	When reel is rotating.	STOP
E04	DRUM FG	No DRUM FG signal is input for more than 3 seconds in the mode that the drum motor must rotate.	When drum is rotating.	STOP
–	–			–
E06	CAPSTAN FG	No CAPSTAN FG signal is input for more than 1.5 seconds in the mode that the capstan motor must rotate (the pinch roller is pressed to the capstan).	When capstan is rotating (pinch roller is pressed to it).	STOP

Note : Only the operation to turn on/off the power is effectual in any emergency mode.

SECTION 2
MECHANISM ADJUSTMENT

2.1 PRELIMINARY REMARKS ON ADJUSTMENT AND REPAIR

2.1.1 Precautions

1. When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.04 N·m (0.4 kgf·cm).
2. Be sure to disconnect the set from the power supply before fastening and soldering parts.
3. When disconnecting/connecting wires, be careful not to get them and their connectors damaged. (Refer to the Section 1.)
4. When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

2.1.2 Necessary jigs

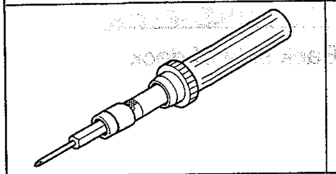
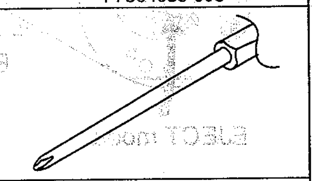
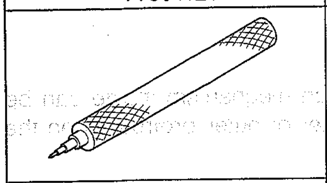
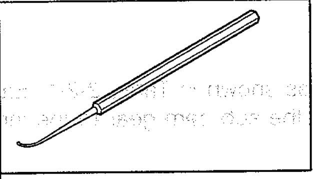
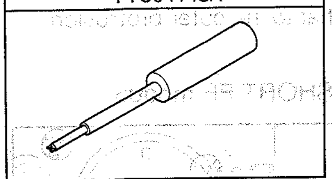
1 Torque driver YTU94088	2 Bit YTU94088-003
	
3 Slit washer fitting jig YTU94121A	4 Chip IC replacement jig PTS40844-2
	
5 Guide driver YTU94148A	
	

Fig. 2-1-1

2.1.3 Notes on disassembling/reassembling procedure

The disassembling procedure table (Table 2-2-2 on page 2-5, a part of the table is shown below for reference) shows the procedure to disassemble/reassemble mechanism parts. Carefully read the following explanation before starting actual disassembling/reassembling work. The item numbers (circled numbers) in the following explanation correspond to those appearing under respective columns of the table.

(1) Circled numbers appearing in this column indicate the order to remove parts. When reassembling, follow these numbers in the reverse order. Circled numbers in this column correspond to those appearing in drawings of this section.

(2) This column shows part names corresponding to circled numbers in the left column.

(3) The symbol (T or B) appearing in this column shows the side which the objective part is mounted on.
T = the upper side, B = the lower side

(4) Symbols appearing in this column indicate drawing numbers.

(5) This column indicates parts and points such as screws, washers, springs, and others to be removed/fitted for disassembling/reassembling the mechanism. Besides such the parts, this column occasionally indicates working points.

P = Spring
W= Washer
S = Screw
* = Lock (L), soldering (SD), shield, connector (CN), etc.

Example
- Remove (W1) = Washer W1.
- * Remove the solder at (SD1) = Point SD1.
- * Disconnect Ⓐ = Connector Ⓐ.

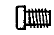
(6) Numbers in this column represent the numbers of notes in the text. For example, "1" means "Note 1".
(For parts that need phase adjustment after reassembling, refer to "2.2.7 Check and adjustment of mechanism phase".)

(7) This column indicates required after-disassembling/reassembling work such as phase adjustment or mechanism adjustment.

2.1.4 Screws and washers used in mechanism

Table 2-1-1 shows screws and washers used in the mechanism by the part numbers with their respective symbols, shapes and colors.

When disassembling/reassembling the mechanism, be careful not to make any mistake in removing/refitting screws and washers.

Symbol	Shape	Parts No.
(S1)		YQ43893-4
(S2)		YQ43893
(S3)		YQ43893-2
(S4)		LY30018-070A

Symbol	Shape	Parts No.
W1		YQ44246
W2		YQ44246-2

Table 2-1-1

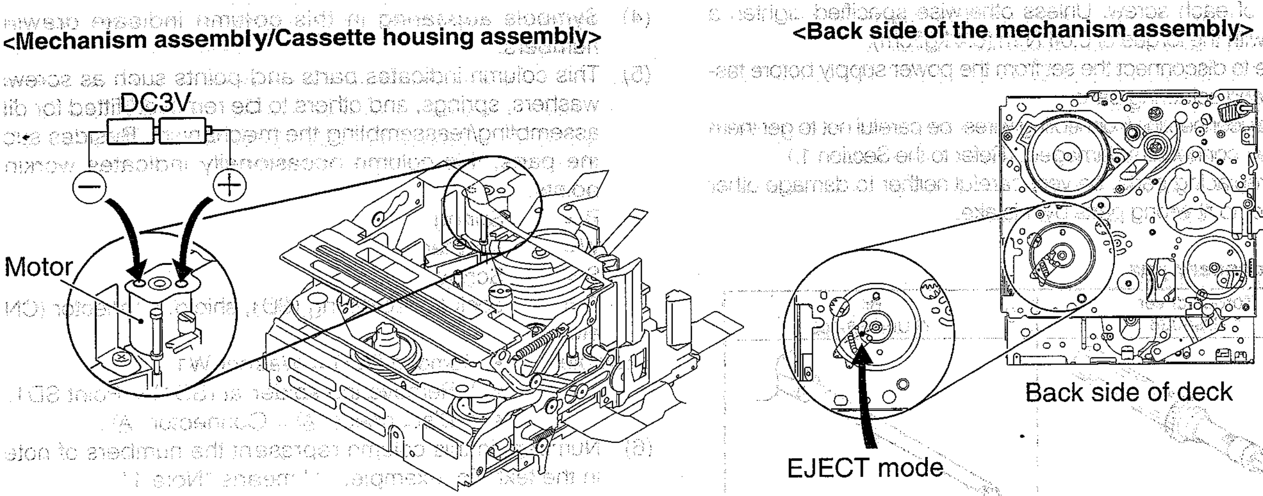
Step	Part Name		Fig.	Point	Note	Remarks
Ⓐ	Cassette housing assembly	T	M1	3(S1),(L1)-(L4)	1,28,29,30	Adjustment
①	Reel disk (SUP) assembly	T	M2	(W1)	2,3	
②	Reel disk (TU) assembly	T	M2	(W1)	2,3	

(1) (2) (3) (4) (5) (6) (7)

2.2 DISASSEMBLING/REASSEMBLING MECHANISM ASSEMBLY

2.2.1 General statement

The mechanism should generally be disassembled/reassembled in the EJECT mode (ASSEMBLY mode). (Refer to Fig. 2-2-1.) However, when the mechanism is removed from the main body, it is set in the STOP mode. Therefore, it is required to shift the mechanism mode from the STOP mode to the EJECT mode after the mechanism is removed from the main body. In such the case, supply 3 V DC to the electrode on the top of the loading motor to enter the mechanism mode into the EJECT mode.



<Mechanism assembly/Cassette housing assembly>
<Back side of the mechanism assembly>
DC3V
⊖
⊕
Motor
Back side of deck
EJECT mode

Fig. 2-2-1

2.2.2 Explanation of mechanism mode

The mechanism mode of this model is classified into six modes as shown in Table 2-2-1. Each mechanism mode can be distinguished from others by the relative position of "●" mark on the sub cam gear to the inner or outer protrusion on the main deck.
Refer to Fig. 2-2-2 to 2-2-7 below.
The EJECT mode, C IN mode and SHORT FF mode should be recognized by the relative position of the "●" mark to the inner protrusion, while the STOP mode, REV mode and PLAY mode should be recognized by that to the outer protrusion.

<EJECT mode>

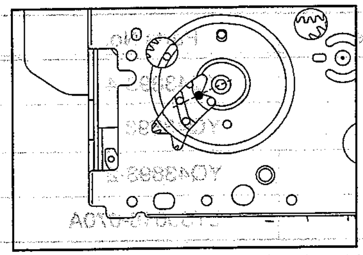


Fig. 2-2-2

<C IN mode>

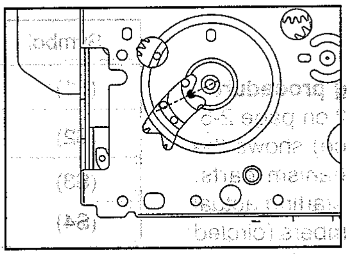


Fig. 2-2-3

<SHORT FF mode>

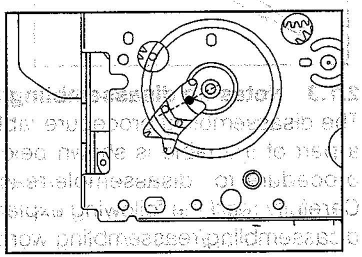


Fig. 2-2-4

<STOP mode>

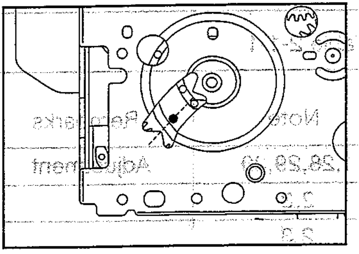


Fig. 2-2-5

<REV mode>

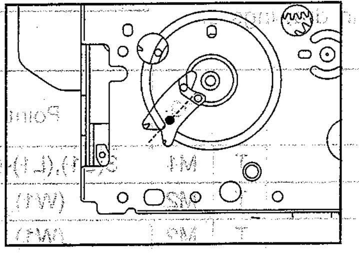


Fig. 2-2-6

<PLAY mode>

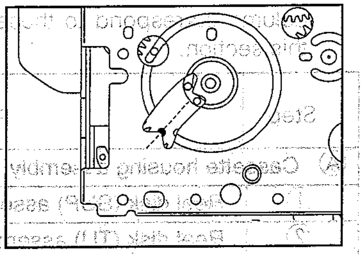


Fig. 2-2-7

2.2.3 Mechanism timing chart

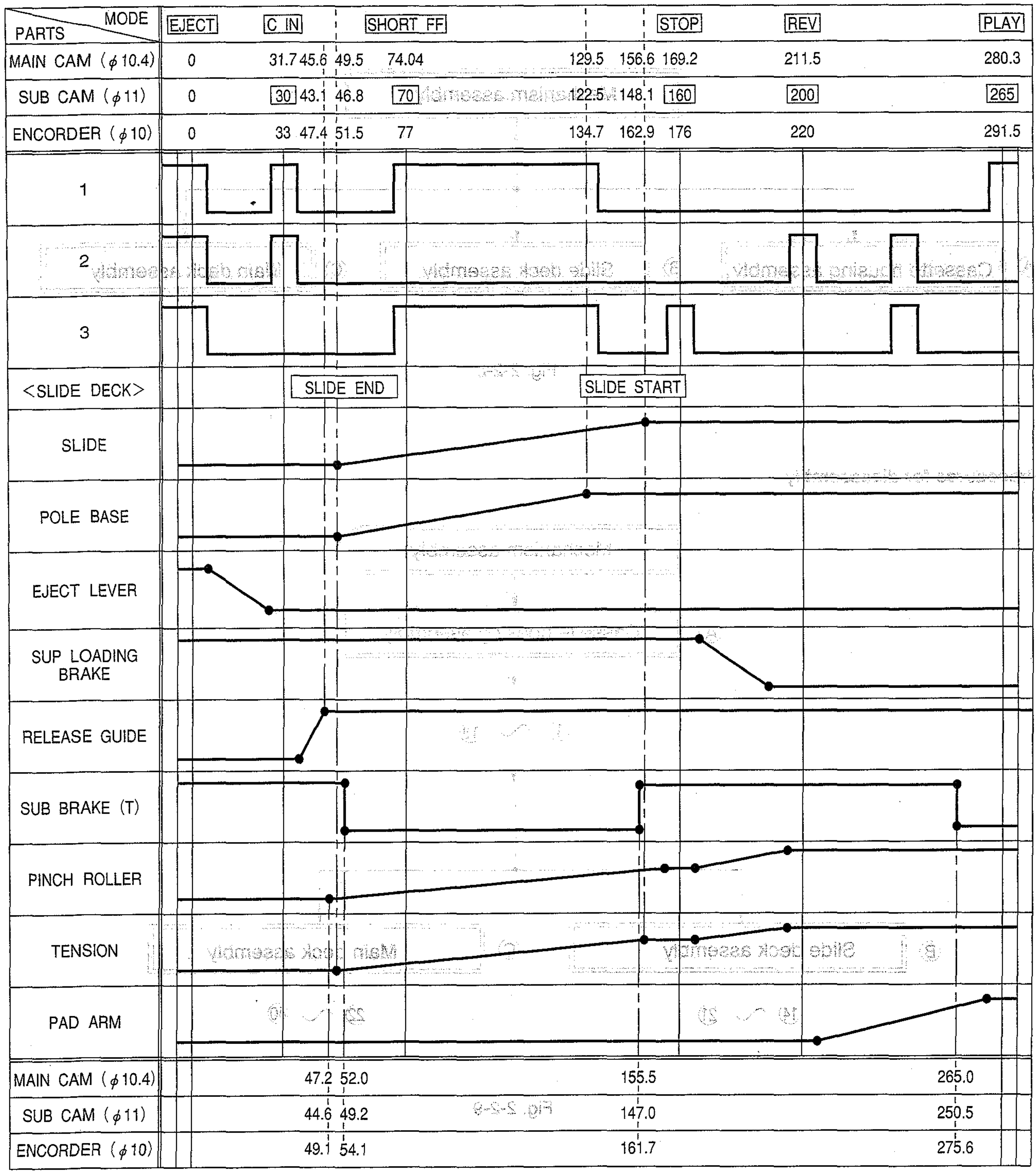


Table 2-2-1

.2.4 Disassembling/reassembling mechanism assembly

1. Configuration

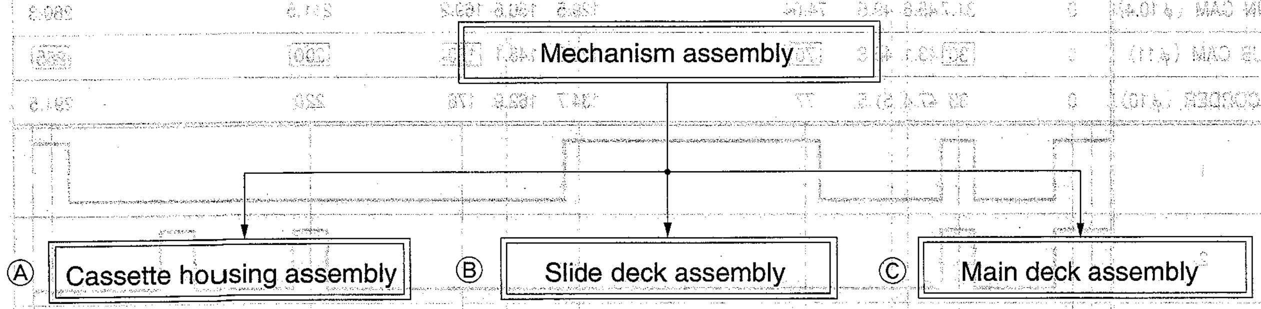

Mechanism assembly
Ⓐ Cassette housing assembly
Ⓑ Slide deck assembly
Ⓒ Main deck assembly

Fig. 2-2-8

2. Procedures for disassembly

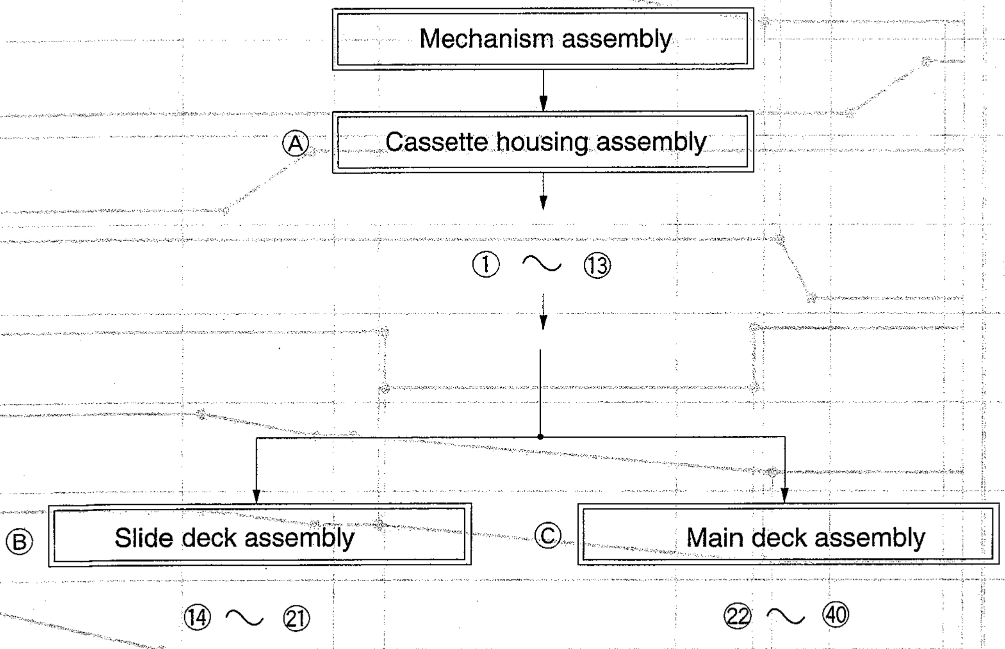

Mechanism assembly
Ⓐ Cassette housing assembly
① ～ ⑬
Ⓑ Slide deck assembly
Ⓒ Main deck assembly
⑭ ～ ㉑
㉒ ～ ㊵

Fig. 2-2-9

3. Disassembling procedure table

Step	Part Name		Fig.	Point	Note	Remoarks
Ⓐ Cassette housing assembly		T	M1	3(S1),(L1)-(L4)	1,28,29,30	Adjustment
①	Reel disk (SUP) assembly	T	M2	(W1)	2,3	
②	Reel disk (TU) assembly	T	M2	(W1)	2,3	
③	Reel cover assembly	T	M2	(S2),2(S1),(W1)	-	
④	Tension arm assembly	T	M3	(W1)	27	
⑤	Release guide assembly	T	M3	-	4	
⑥	Idler arm assembly	T	M3	(W2)	-	
⑦	Guide arm assembly	T	M3	-	4	
⑧	Pinch roller arm assembly	T	M3	(W1)	-	
⑨	Cleaner arm assembly	T	M4	(L5)	5	
⑩	Slant pole arm assembly	T	M4	(W1),(L6),(P1),(P2)	26	
⑪	Drum assembly	T	M4	3(S2)	6	
⑫	Guide roller (S) assembly	T	M5	(P3)	7,8	
⑬	Rail assembly	T	M5	3(W1)	9,25	
Ⓑ Slide deck assembly / Ⓒ Main deck assembly		T	M6	(W1),(L7)-(L10)	10,24	(Adjustment)
Ⓑ Slide deck assembly						
⑭	Loading brake assembly	T	M7	(W1),(L11),(P4)	23	Adjustment
⑮	Guide pin (SUPPLY)	T	M7	(S2)	-	
⑯	Pad arm assembly	T	M7	(W1),(L12),(P5)	22	
⑰	Slide guide plate assembly	T	M7	(S3)	21	Adjustment
⑱	Collar	T	M7	-	11	
⑲	Collar	T	M7	-	11	
⑳	Sub brake assembly	T	M7	(W1),(L13),(P6)	20	
㉑	Control plate assembly	T	M7	2(W1),(L14),(P7)	20	
Ⓒ Main deck assembly						
㉒	Tension lever assembly	T	M8	-	19	
㉓	Slide lever assembly	T	M8	-	18	
㉔	Brake control lever assembly	T	M8	-	17	
㉕	Loading guide	T	M9	(S2)	-	
㉖	Timing belt	T	M9	-	16	
㉗	Center gear assembly	T	M9	-	-	
㉘	Motor bracket assembly	T	M9	2(S2)	12	
㉙	Worm wheel	T	M9	(W1)	-	(Phase adjustment)
㉚	Gear holder	T	M9	(S2)	-	
㉛	Main cam gear	T	M10	(S2)	15	Phase adjustment
㉜	Brake control plate	T	M10	(L15)	15	Phase adjustment
㉝	Rotary encoder	T	M10	(S2),(W1)	13	Phase adjustment
㉞	Connect gear	T	M10	(W1)	-	(Phase adjustment)
㉟	Reel drive pulley assembly	T	M10	(W2)	-	
㊱	Catcher (T) assembly	T	M11	2(S2)	-	
㊲	Capstan motor	T	M11	2(S2)	-	
㊳	Charge arm assembly	T	M11	(W1)	14	
㊴	Sub cam gear	T	M11	(S2)		Phase adjustment
㊵	PWB holder	B	M11	2(S2)		

Table 2-2-2

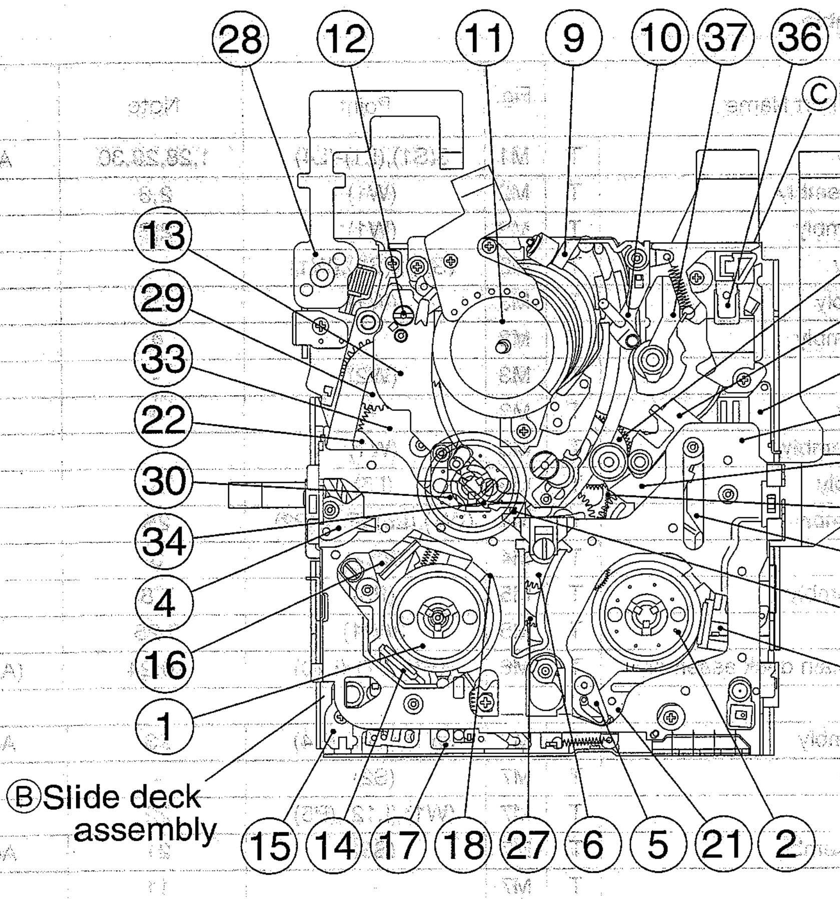

28
12
11
9
10
37
36
Ⓒ Main deck assembly
35
7
25
3
8
26
24
19
20
13
29
33
22
30
34
4
16
1
Ⓑ Slide deck assembly
15
14
17
18
27
6
5
21
2

Fig. 2-2-10 Top view

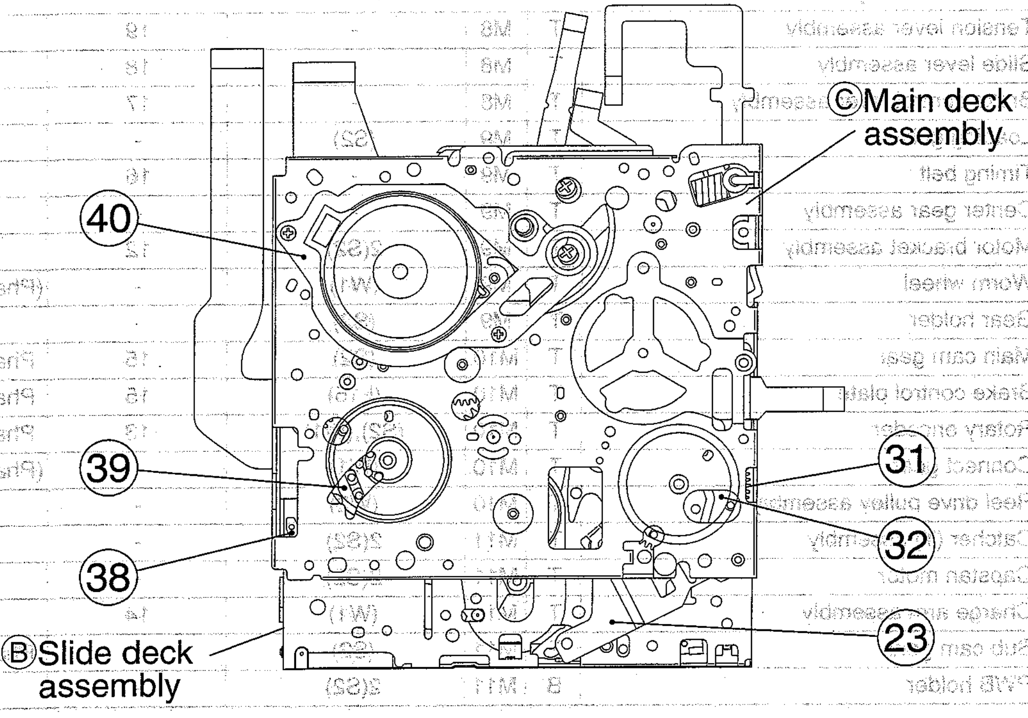

Ⓒ Main deck assembly
40
39
38
Ⓑ Slide deck assembly
31
32
23

Fig. 2-2-11 Bottom view

2.2.5 Disassembling/reassembling

1. Ⓐ Cassette housing assembly

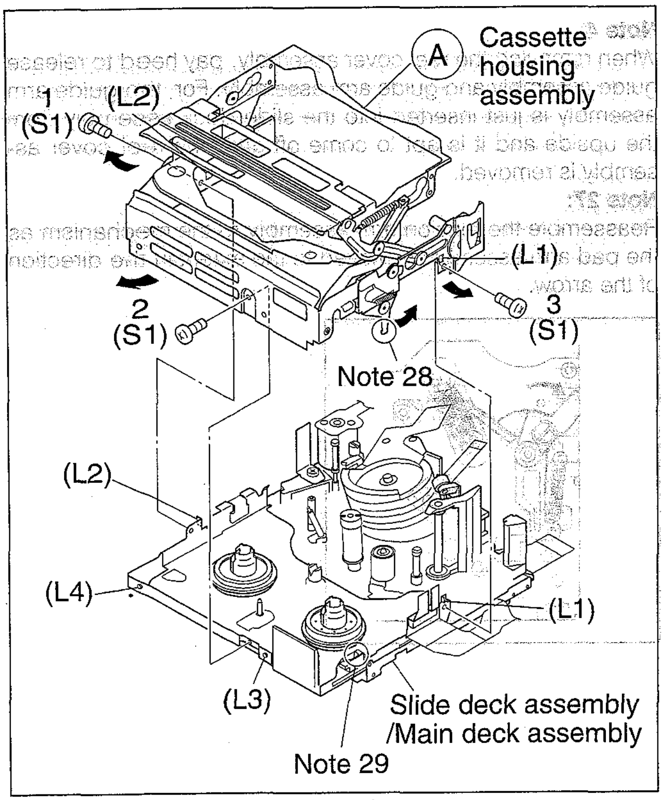

A
Cassette housing assembly
1
(L2)
(S1)
(L1)
2
(S1)
3
(S1)
Note 28
(L2)
(L4)
(L1)
(L3)
Slide deck assembly
/Main deck assembly
Note 29

Fig. M1

2. ① Reel disk (SUP) assembly
② Reel disk (TU) assembly
③ Reel cover assembly

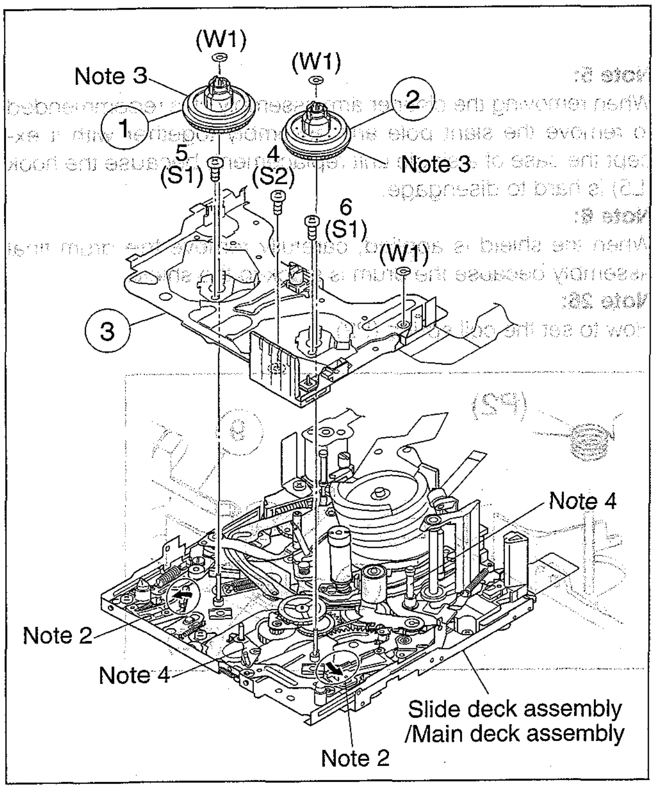
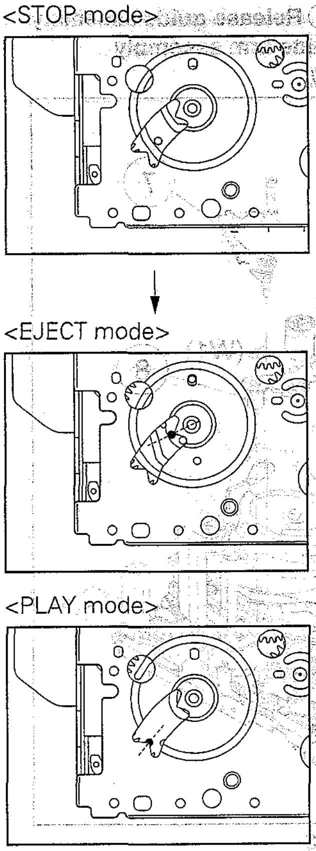

(W1)
Note 3
(W1)
2
1
5
(S1)
4
(S2)
Note 3
6
(S1)
(W1)
3
Note 4
Note 2
Note 4
Slide deck assembly
/Main deck assembly
Note 2

Fig. M2



Note 1:
Shift the mechanism mode from the STOP mode to the EJECT mode.

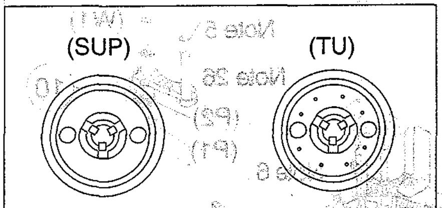
Note 28:
Reassemble the cassette housing assembly to the mechanism as the cancel lever is moved in the direction of the arrow.

Note 29:
When reassembling the cassette housing to the mechanism, make sure that there is no deformation in the frame or no damage to the switches, etc.

Note 30:
After reassembling the component parts, check the mechanism operation in the PLAY mode.
For details of checking method, refer to "2.2.8 Reassembling slide deck assembly and main deck assembly".

Note 2:
When removing the reel disk assembly, be careful not to break the brake pad which applies lateral pressure to the reel disk.

Note 3:
Be careful not to make a mistake in installing the reel disk.
The SUP reel disk and TU reel disk can be distinguished from each other by the appearance as shown below.



Note 4:
When removing the reel cover assembly, pay heed to the guide arm assembly. For, the guide arm assembly is just inserted into the slide deck assembly from the upside and it is apt to come off after the reel cover assembly is removed.

3. ④ Tension arm assembly/ ⑤ Release guide assembly ⑥ Idler arm assembly/ ⑦ Guide arm assembly ⑧ Pinch roller arm assembly

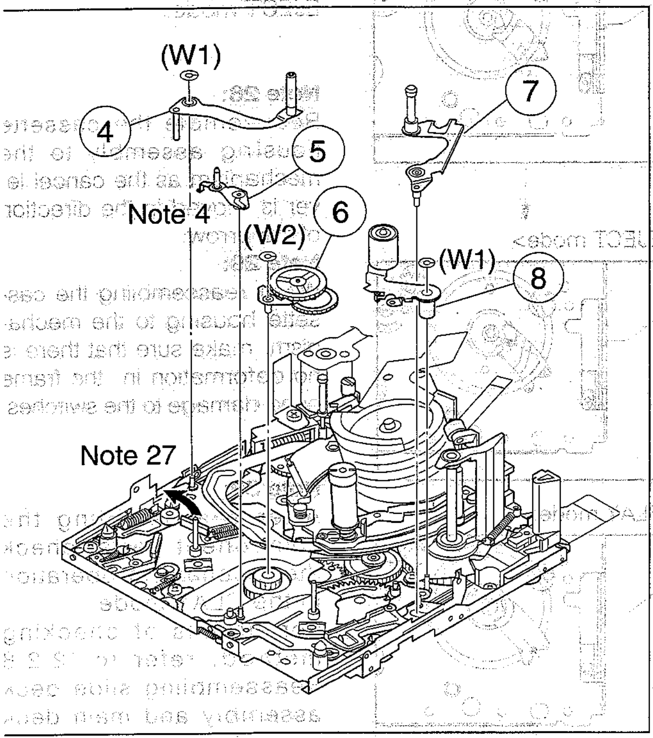


Fig. M3

4. ⑨ Cleaner arm assembly/ ⑩ Slant pole arm assembly ⑪ Drum assembly

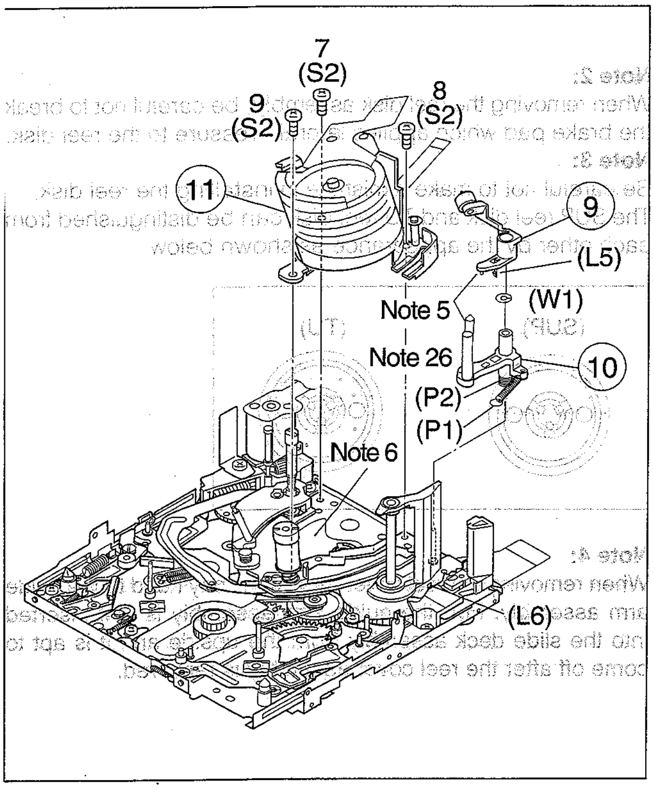
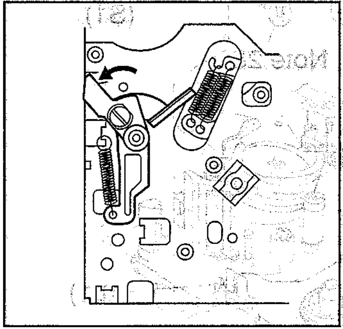


Fig. M4

Note 4:
When removing the reel cover assembly, pay heed to release guide assembly and guide arm assembly. For, the guide arm assembly is just inserted into the slide deck assembly from the upside and it is apt to come off after the reel cover assembly is removed.

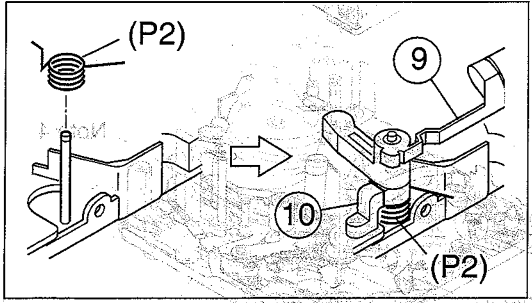
Note 27:
Reassemble the tension arm assembly to the mechanism as the pad arm assembly is moved to the extent in the direction of the arrow.



Note 5:
When removing the cleaner arm assembly, it is recommended to remove the slant pole arm assembly together with it except the case of a single unit replacement, because the hook (L5) is hard to disengage.

Note 6:
When the shield is applied, carefully remove the drum final assembly because the drum is stuck to the shield.

Note 26:
How to set the coil spring (P2).



5. ⑫ Guide roller (SUPPLY) assembly/ ⑬ Rail assembly

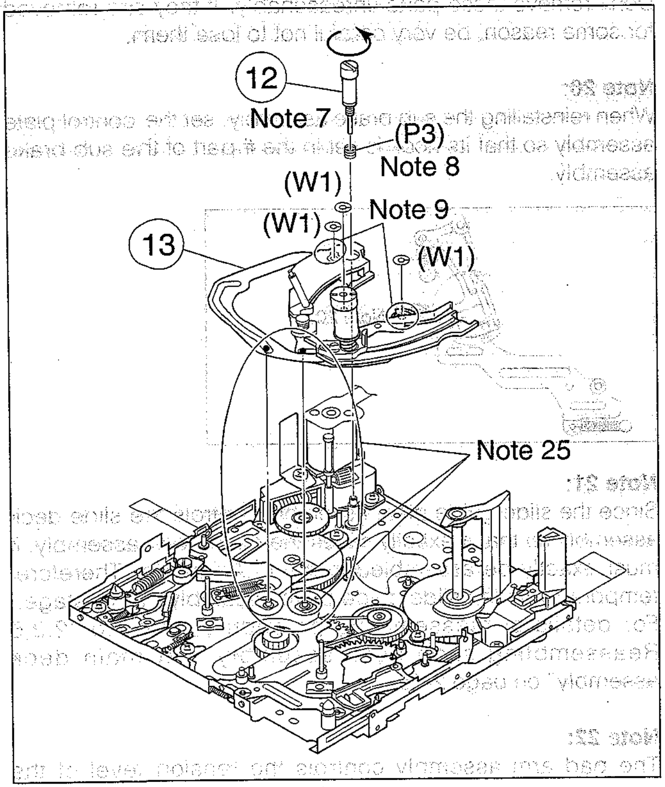


Fig. M5

6. Ⓑ Slide deck assembly/ Ⓒ Main deck assembly

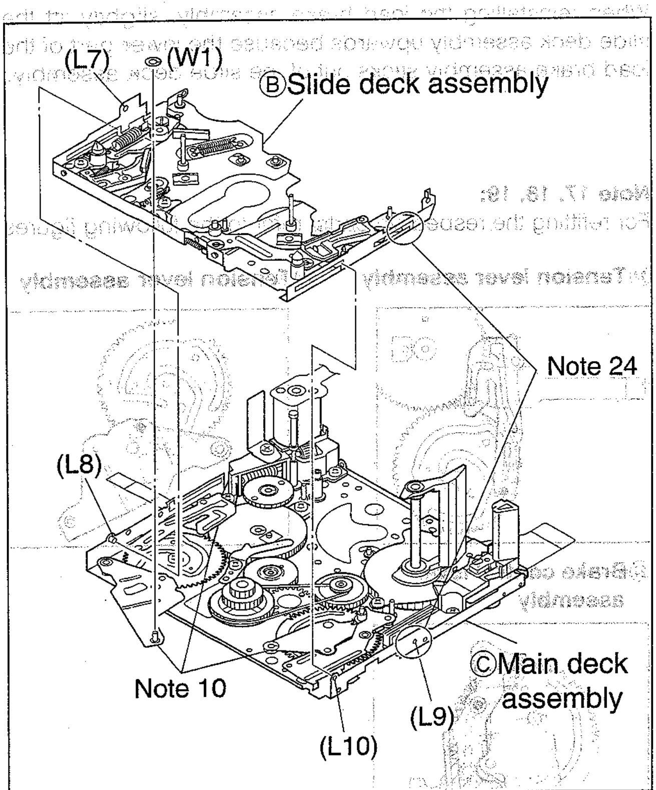


Fig. M6

Note 7:
When removing the rail assembly, remove the guide roller (SUPPLY) assembly beforehand.

Note 8:
Pay careful attention to the spring not to lose it.

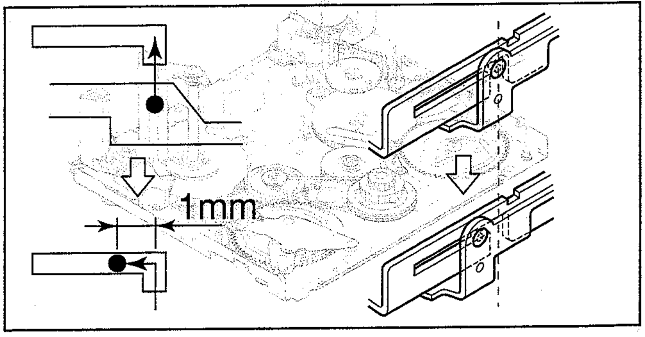
Note 9:
Pay careful attention to the engagement of the rail assembly's arm ends because they easily come off the engagement. Moreover, make sure that there is neither deformation nor damage observed in them.

Note 25:
When removing the rail assembly, check to see if the collar is securely set in the arm groove.

Note 10:
When removing the slide deck assembly, pay heed to the three components of the following because they are apt to come off after the slide deck assembly is removed.

㉒ Tension lever assembly/ ㉓ Slide lever assembly
㉔ Brake control lever assembly
For reassembling those components, refer to Fig. M8 on page 2-10.

Note 24:
When reassembling the slide deck assembly to the main deck assembly, combine them with each other by the side grooves and then slide the slide deck assembly by 1 mm or so.



⑭ Loading brake assembly/ ⑮ Guide pin (S) ⑯ Pad arm assembly/ ⑰ Slide guide plate assembly ⑱ Collar/ ⑲ Collar/ ⑳ Sub brake assembly ㉑ Control plate assembly

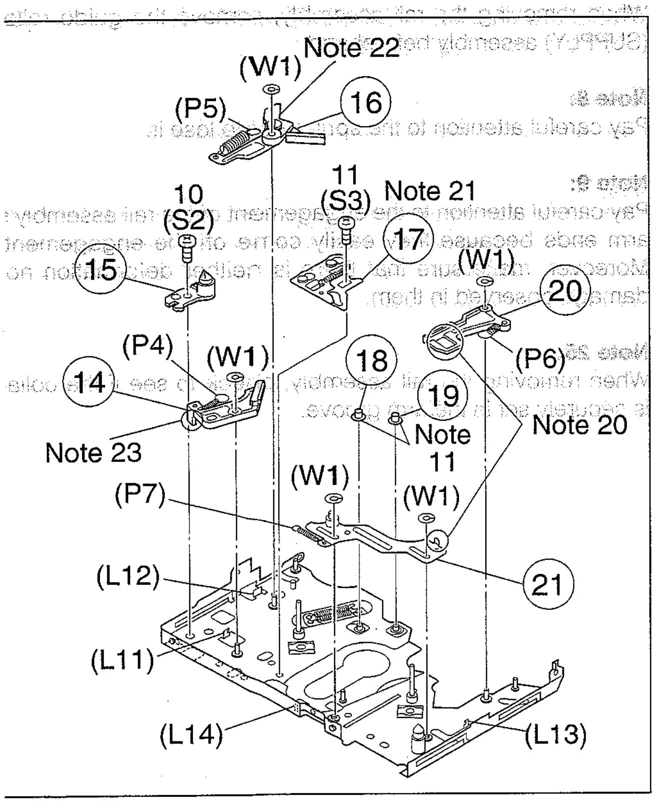


Fig. M7

8. ㉒ Tension lever assembly/ ㉓ Slide lever assembly ㉔ Brake control lever assembly

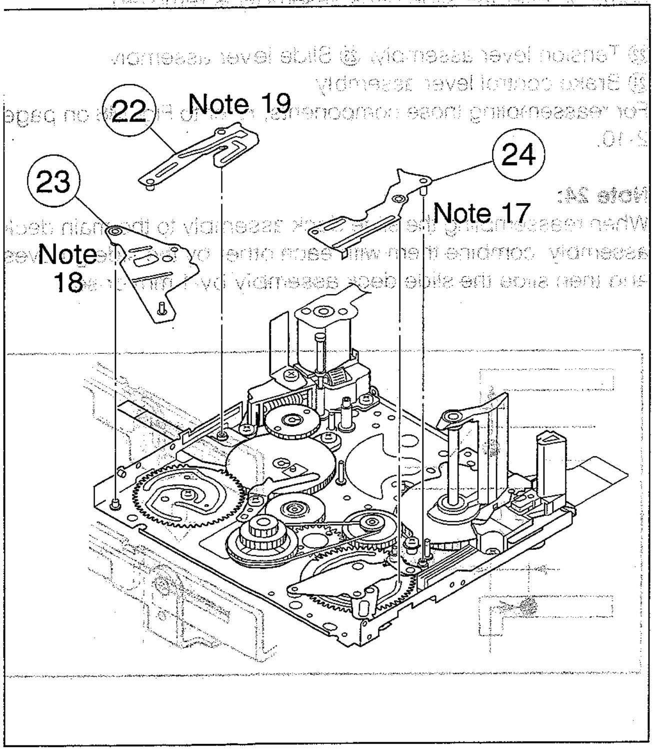
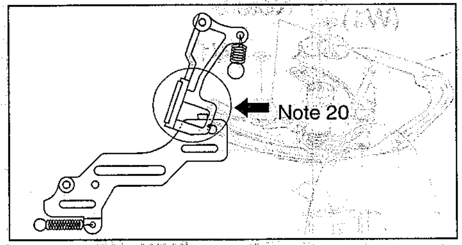


Fig. M8

Note 11:
Don't remove these parts unreasonably. If they are removed for some reason, be very careful not to lose them.

Note 20:
When reinstalling the sub brake assembly, set the control plate assembly so that its hook is set in the # part of the sub brake assembly.



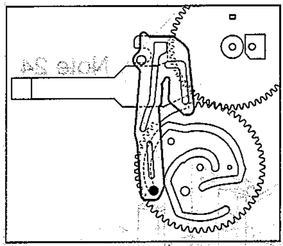
Note 21:
Since the slide guide plate assembly controls the slide deck assembly so that it exactly slides the main deck assembly, it must exactly be assembled in the PLAY mode. Therefore, temporarily fix the slide guide plate assembly in this stage. For details of reassembling procedure, refer to "2.2.8 Reassembling slide deck assembly and main deck assembly" on page 2-15.

Note 22:
The pad arm assembly controls the tension level of the tension arm assembly. For adjustment of the tension arm assembly, refer to page 2-8.

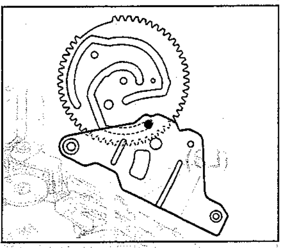
Note 23:
When reinstalling the load brake assembly, slightly lift the slide deck assembly upwards because the lower part of the load brake assembly sticks out of the slide deck assembly.

Note 17, 18, 19:
For refitting the respective parts, refer to the following figures

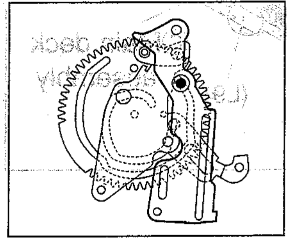
㉒Tension lever assembly



㉓Tension lever assembly



㉔Brake control lever assembly



9. ㉕ Loading guide/ ㉖ Timing belt
㉗ Center gear assembly/ ㉘ Motor bracket assembly
㉙ Worm wheel/ ㉚ Gear holder

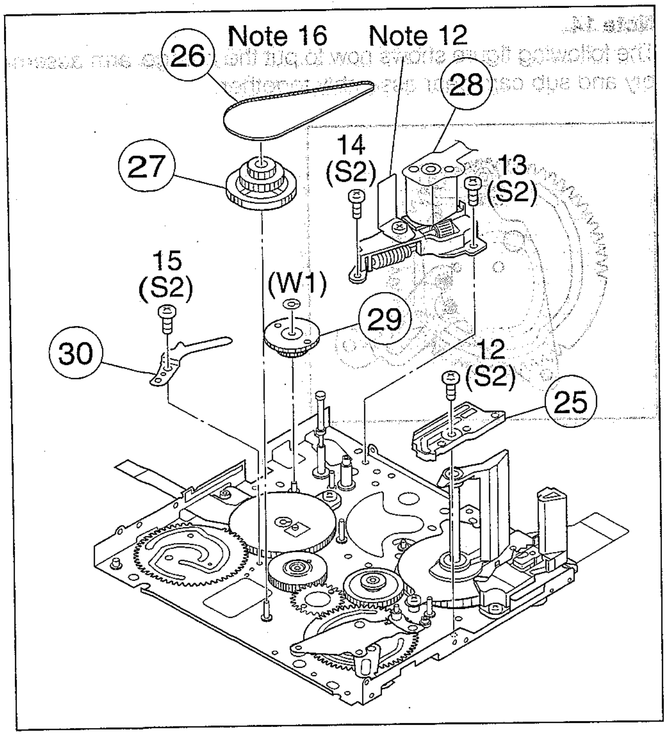

26
Note 16
Note 12
28
27
14
(S2)
13
(S2)
15
(S2)
(W1)
29
30
12
(S2)
25

Fig. M9

10. ㉛ Main cam gear/ ㉜ Brake control plate
㉝ Rotary encoder/ ㉞ Connect gear
㉟ Reel drive pulley assembly

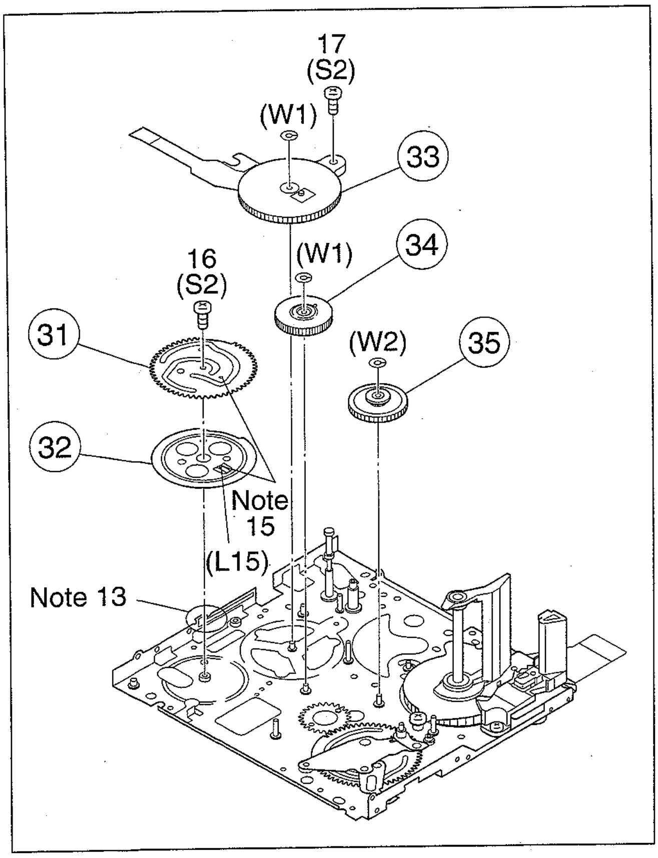

17
(S2)
(W1)
33
(W1)
34
16
(S2)
31
(W2)
35
32
Note
15
(L15)
Note 13

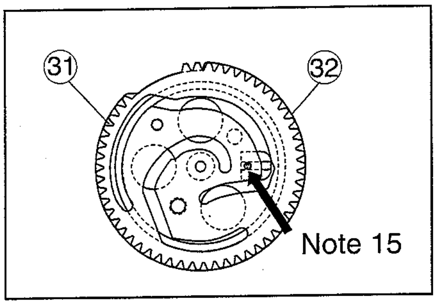
Fig. M10

Note 12:
Carefully handle the DEW sensor. (Don't touch the sensor surface in particular.)

Note 16:
When engaging the timing belt, make sure that it securely engages with the gears of both the center gear assembly and reel drive pulley assembly.

Note 13:
When removing/refitting parts, pay careful attention to the flexible board and so on not to damage them.

Note 15:
When reinstalling the main cam gear and the brake control plate, first fit them together so that the protrusion on the brake control plate is set in the slot on the main cam gear as shown below, next install the two together to the main deck assembly.


31
32
Note 15

11. ㊱ Catcher (T) assembly/ ㊲ Capstan motor ㊳ Charge arm assembly/ ㊴ Sub cam gear ㊵ PWB holder

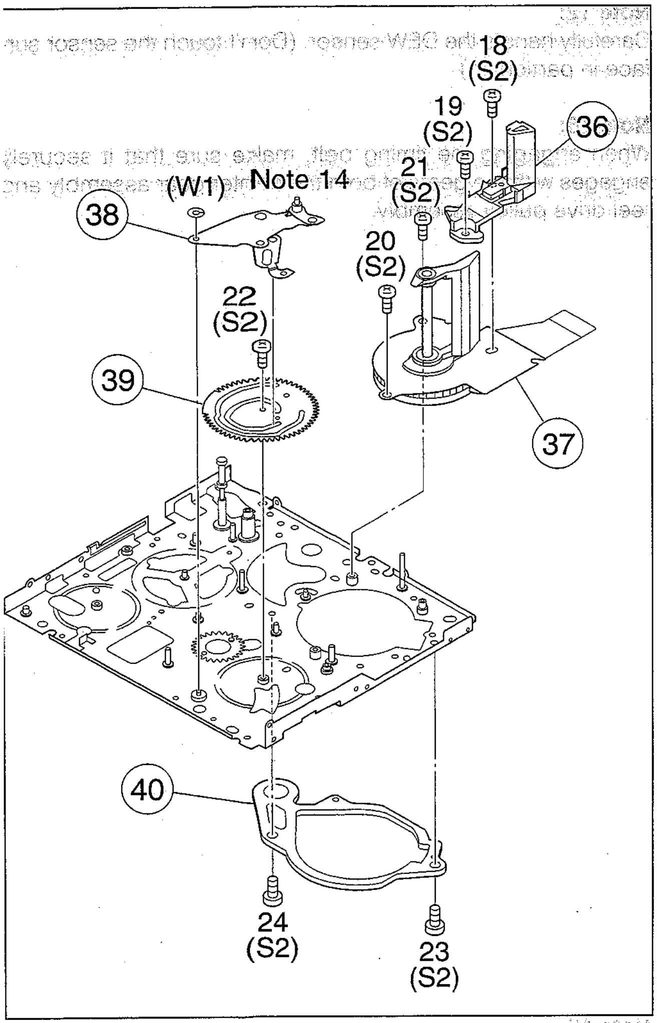
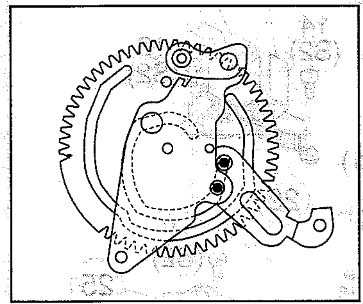
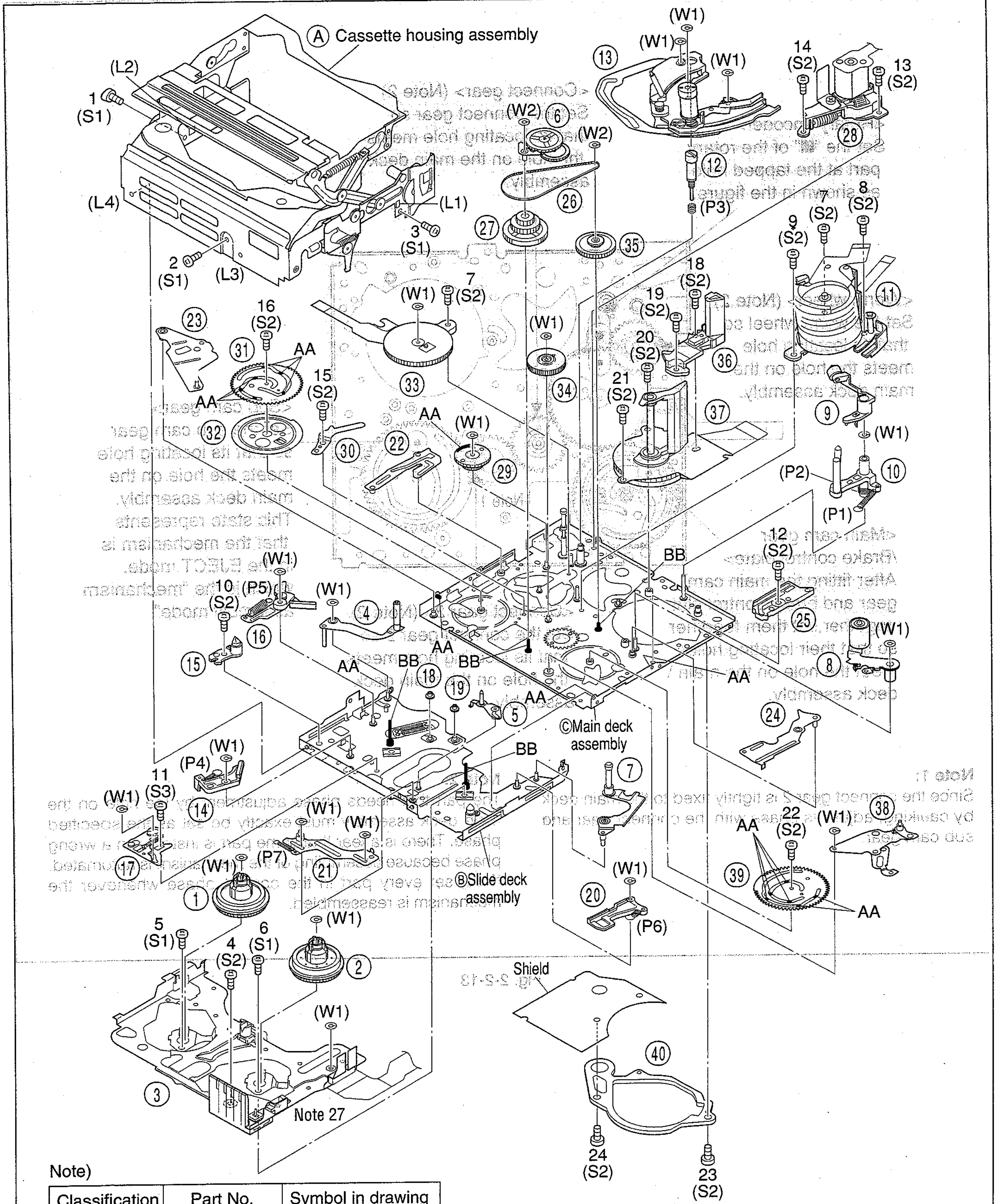

18
(S2)
19
(S2)
36
21
(S2)
(W1)
Note 14
38
20
(S2)
22
(S2)
39
37
40
24
(S2)
23
(S2)

Fig. M11

Note 14:
The following figure shows how to put the charge arm assembly and sub cam gear assembly together.



2.2.6 List of procedures for disassembly



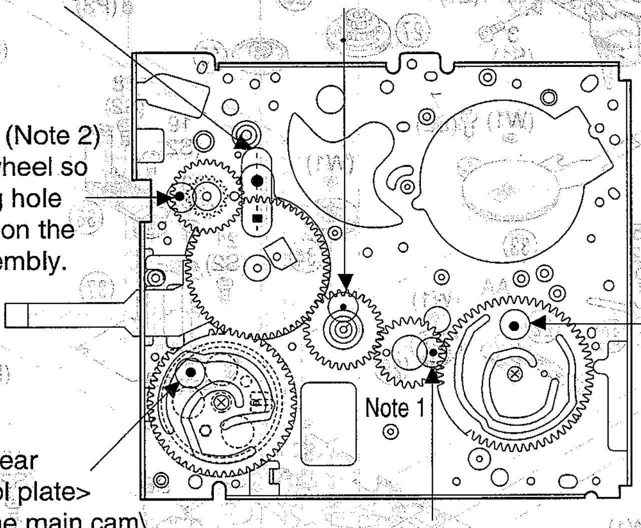
Ⓐ Cassette housing assembly
(L1)
(L2)
(L3)
(L4)
1 (S1)
2 (S1)
3 (S1)
(W1)
(W2)
⑬
14 (S2)
13 (S2)
⑥
㉘
⑫
(P3)
㉖
㉗
㉟
7 (S2)
8 (S2)
9 (S2)
⑪
18 (S2)
19 (S2)
20 (S2)
21 (S2)
㊱
㊲
㉝
㉞
㉓
16 (S2)
㉛
AA
15 (S2)
㉜
㉚
㉒
㉙
⑨
⑩
(P1)
(P2)
12 (S2)
BB
㉕
⑧
10 (S2)
(P5)
⑯
⑮
④
⑱
⑲
⑤
㉔
ⒸMain deck assembly
⑦
(P4)
11 (S3)
⑭
⑰
(P7)
㉑
ⒷSlide deck assembly
①
㊳
22 (S2)
㊴
⑳
(P6)
5 (S1)
4 (S2)
6 (S1)
②
Shield
㊵
③
Note 27
24 (S2)
23 (S2)

Note)

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

Fig. 2-2-12

2.2.7 Checkup and adjustment of mechanism phase



<Rotary encoder>
Set the "■" of the rotary part at the tapped hole as shown in the figure.

<Connect gear> (Note 2)
Set the connect gear so that its locating hole meets the hole on the main deck assembly.

<Worm wheel> (Note 2)
Set the worm wheel so that its locating hole meets the hole on the main deck assembly.

<Sub cam gear>
Set the sub cam gear so that its locating hole meets the hole on the main deck assembly. This state represents that the mechanism is in the EJECT mode, which is the "mechanism assembly mode".

<Main cam gear /Brake control plate>
After fitting the main cam gear and brake control plat together,set them together so that their locating holes meet the hole on the main deck assembly.

<Connect gear 2> (Note 2)
Set the connect gear 2 so that its locating hole meets the hole on the main deck assembly.

Note 1:
Since the connect gear 2 is tightly fixed to the main deck by caulking, adjust its phase with the connect gear and sub cam gear.

Note 2:
The part that needs phase adjustment by the hole on the main deck assembly must exactly be set as the specified phase. There is a fear that some part is installed in a wrong phase because assembling of the mechanism is automated. If so, set every part in the correct phase whenever the mechanism is reassembled.

Fig. 2-2-13

2.2.8 Reassembling slide deck assembly and main deck assembly

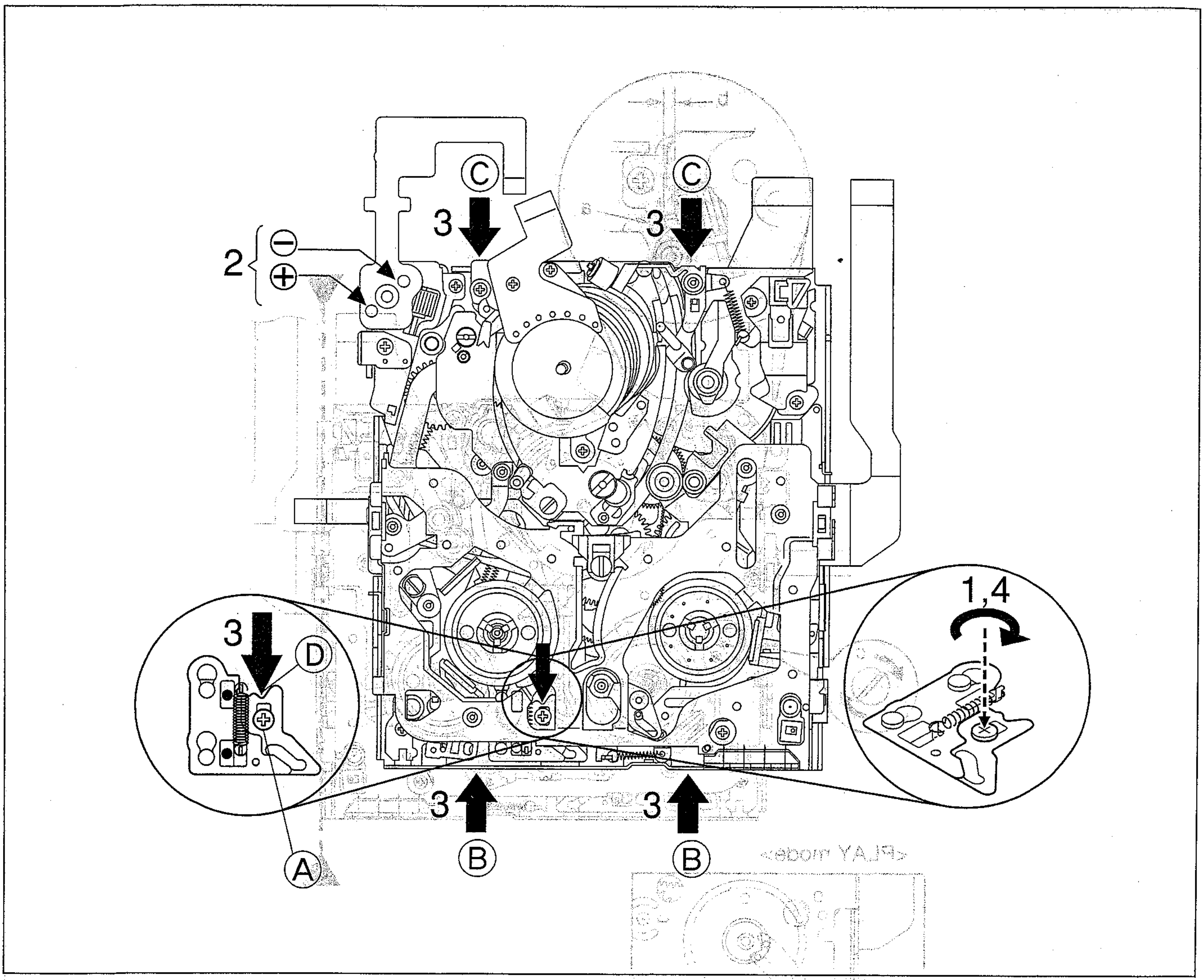


Fig. 2-2-14

Reassembling procedure

1. Loosen the screw Ⓐ.
2. Set the mechanism in the PLAY mode. (Refer to page 2-2.)
3. Press the end face B of the slide deck assembly (reel disk side) and the end face Ⓒ of the main deck assembly (drum assembly side) with uniform force so that the two assemblies are tightly pressed to each other. Furthermore, press the part Ⓓ and tighten the screw Ⓐ.

Note : *Tightening torque for screw Ⓐ: 0.03 N·m (0.3 kgf·cm)*

2.2.9 Locating tension pole

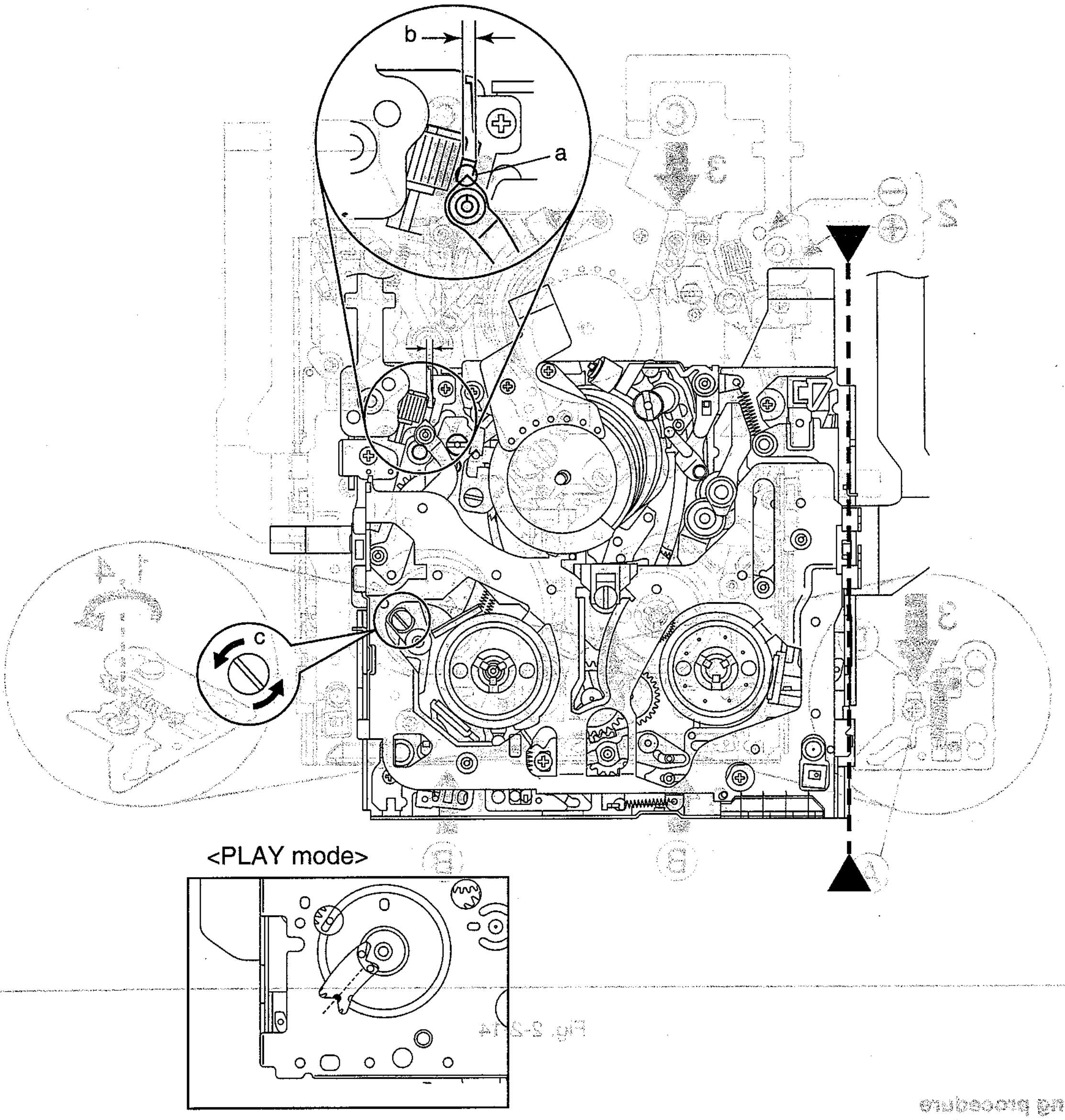


Fig. 2-2-15

Locating procedure

1. Enter the mechanism assembly into the PLAY mode. (Refer to page 2-2.)
2. When the " ▸-----◂ " part is positioned down, make sure that the part "a" of the tension arm assembly is located within the range of "b".
3. If the part "a" is out of the range, turn the pin "c" to adjust the position.

2.3 PROCEDURE OF COMPATIBILITY AND P.B. EQ. (ERROR RATE) ADJUSTMENTS

2.3.1 Precautions

Prior to starting disassembling and adjusting work, be sure to make a backup copy of the data stored in the EEPROM (IC1003 on the MAIN board) for the "EEPROM utility" of the SSS software.

Table 2-3-1 shows important service points for adjustment of P.B. EQ. (error rate).

Adjustment item / Service point	Linearity adjustment	P.B. Switching Point adjustment	Head Recording Current adjustment	Error rate (P.B. EQ). adjustment (SP/LP)
Replacement of DRUM	Necessary **Note 1**	Necessary	Necessary	Necessary
Replacement of parts of tape transport system	Necessary **Note 1**	Unnecessary	Unnecessary	Check
Repair of parts of tape transport system (DRUM)	Necessary **Note 1**	Unnecessary	Unnecessary	Check
Replacement of IC3501 (MAIN board, PRE/REC amp)	Unnecessary	Unnecessary	Unnecessary	Necessary
Replacement of MAIN BOARD **Note 2**	Unnecessary	Necessary	Necessary	Necessary

Table 2-3-1

Note 1: *Linearity adjustment is needed only after replacement of the drum or replacement/repair of the TU/SUP guide rail.*

Note 2: *After replacement of the MAIN board, be sure to write the original data on the EEPROM of the new MAIN board. After data writing, adjust the camera section. When the MAIN board is replaced for the reason of communication failure, install the original EEPROM on the new MAIN board.*

If adjustment is needed for two or more items, proceed in adjustment of respective items in the following order.

2.3.3 Linearity adjustment
↓
2.3.4 PB switching point adjustment
↓
2.3.5 Head REC current adjustment
↓
2.3.6 P.B. EQ. (error rate) adjustment (both in SP and LP)

2.3.2 Adjustment standard

Note : *For details of the test instruments, tools and jigs required for adjustment, refer to pages 1-2, 1-3 and 2-1 of this manual.*

1. Set the GR-DVM50U on the docking station.

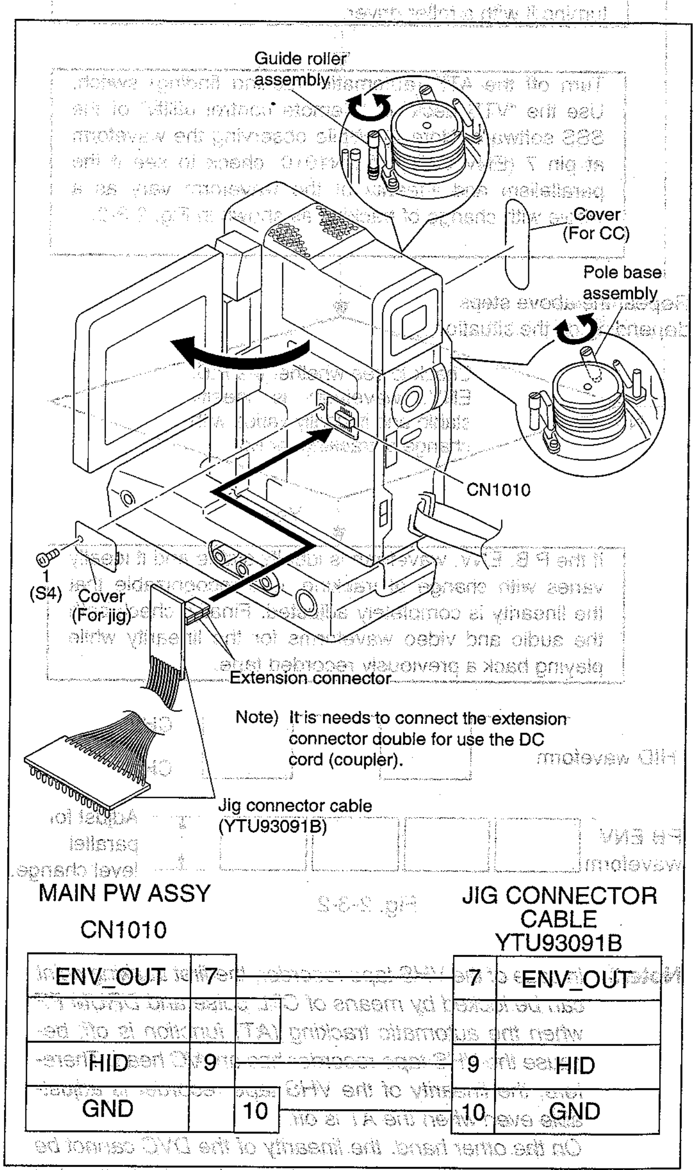
Note : *Essentially, the docking station is not needed for linearity adjustment. However, it is recommended to use the docking station in order to stabilize the camera through adjustment.*

2. Remove the cover (CC).

Note : *Carefully remove the cover not to scratch the exterior of the camera. Since the cover (CC) shall be restored to the original position after adjustment, be very careful not to soil its adhesive surface.*

3. Open the LCD monitor assembly. Remove one screw (1) and then remove the cover (for jig).

Note : *Before connecting the jig connector cable, etc., be sure to connect the DC cable (coupler) and set the cassette tape properly.*

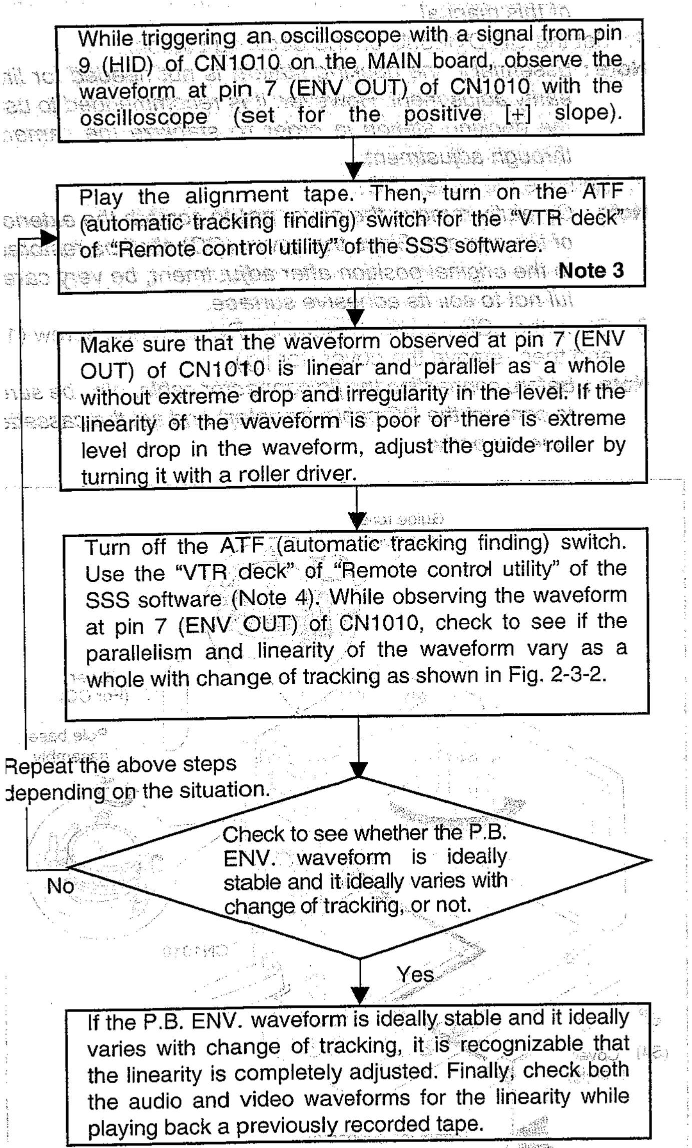


Note) It is needs to connect the extension connector double for use the DC cord (coupler).

Fig. 2-3-1

.3.3 Linearity adjustment

rocedure of linearity adjustment is shown by the following owchart.


While triggering an oscilloscope with a signal from pin 9 (HID) of CN1010 on the MAIN board, observe the waveform at pin 7 (ENV OUT) of CN1010 with the oscilloscope (set for the positive [+] slope).

Play the alignment tape. Then, turn on the ATF (automatic tracking finding) switch for the "VTR deck" of "Remote control utility" of the SSS software. **Note 3**

Make sure that the waveform observed at pin 7 (ENV OUT) of CN1010 is linear and parallel as a whole without extreme drop and irregularity in the level. If the linearity of the waveform is poor or there is extreme level drop in the waveform, adjust the guide roller by turning it with a roller driver.

Turn off the ATF (automatic tracking finding) switch. Use the "VTR deck" of "Remote control utility" of the SSS software (Note 4). While observing the waveform at pin 7 (ENV OUT) of CN1010, check to see if the parallelism and linearity of the waveform vary as a whole with change of tracking as shown in Fig. 2-3-2.

Repeat the above steps depending on the situation.

Check to see whether the P.B. ENV. waveform is ideally stable and it ideally varies with change of tracking, or not.

If the P.B. ENV. waveform is ideally stable and it ideally varies with change of tracking, it is recognizable that the linearity is completely adjusted. Finally, check both the audio and video waveforms for the linearity while playing back a previously recorded tape.

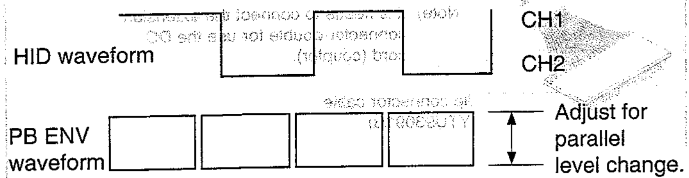


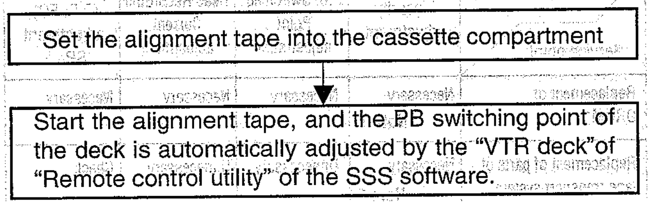
Fig. 2-3-2

Note 3: *In case of the VHS tape recorder, the first tracking point can be locked by means of CTL pulse and DRUM FF when the automatic tracking (AT) function is off, because the VHS tape recorder has an A/C head. Therefore, the linearity of the VHS tape recorder is adjustable even when the AT is off.*
On the other hand, the linearity of the DVC cannot be adjusted when the automatic tracking finding (ATF) function is inactivated, because the DVC has no A/C head. When the ATF of the DVC is off, its tracking operation is effectuated only for the speed control system. Therefore, as time elapses, the DVC gradually fails in the servo control and it becomes hard to adjust the linearity.

Note 4: *In practice, if linearity adjustment is performed within a few minutes after the ATF is switched off, the state (ATF off) may be left out of consideration, because the speed servo of the DVC functions when the ATF is off.*

2.3.4 PB switching point adjustment

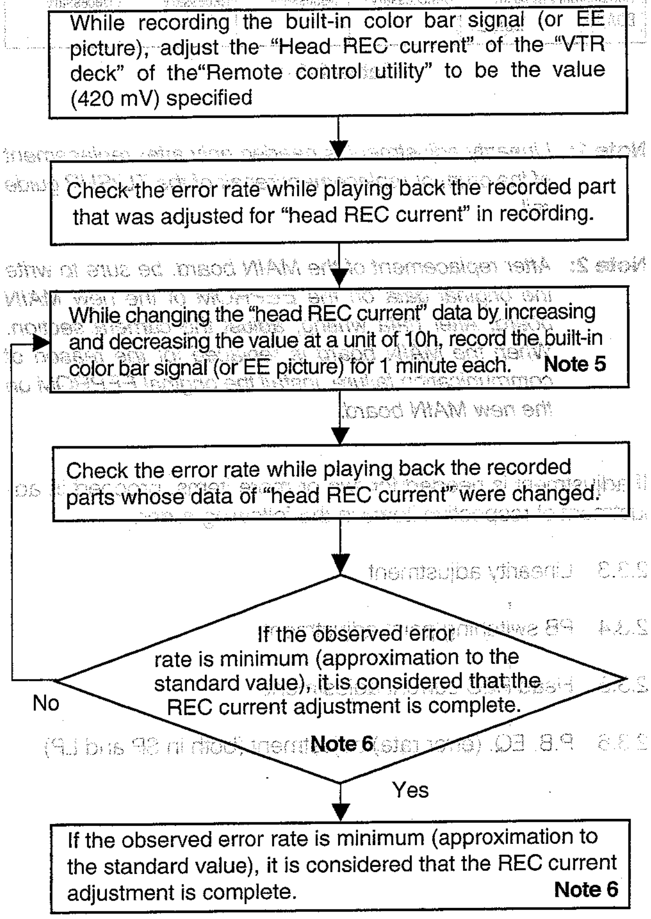
Procedure of PB switching point adjustment is shown by the following flowchart.


Set the alignment tape into the cassette compartment

Start the alignment tape, and the PB switching point of the deck is automatically adjusted by the "VTR deck" of "Remote control utility" of the SSS software.

2.3.5 Head REC current adjustment

Procedure of head REC current adjustment is shown by the following flowchart.


While recording the built-in color bar signal (or EE picture), adjust the "Head REC current" of the "VTR deck" of the "Remote control utility" to be the value (420 mV) specified

Check the error rate while playing back the recorded part that was adjusted for "head REC current" in recording.

While changing the "head REC current" data by increasing and decreasing the value at a unit of 10h, record the built-in color bar signal (or EE picture) for 1 minute each. **Note 5**

Check the error rate while playing back the recorded parts whose data of "head REC current" were changed.

If the observed error rate is minimum (approximation to the standard value), it is considered that the REC current adjustment is complete. **Note 6**

If the observed error rate is minimum (approximation to the standard value), it is considered that the REC current adjustment is complete. **Note 6**

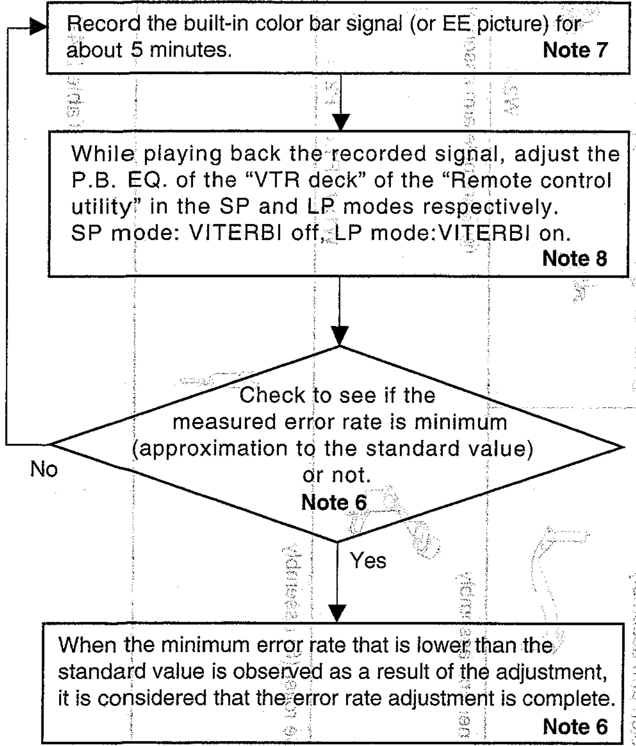
If the minimum error rate does not approximate to the standard value (see Note 7) in spite of repeated adjustments, clean the head and tape transport system. If cleaning has no effect on improvement of the error rate, it is thinkable that there is a failure in the head or the preamp shield, or the P.B. EQ. (error rate) is incompletely adjusted. In such the case, try to proceed in P.B. EQ. adjustment with the alignment tape prior to adjustment of "head REC current". In other words, if there is something abnormal in the playback system, the indication of the error rate is meaningless. Therefore, it is recommended to perform the "P.B. EQ. (error rate) adjustment" roughly with the alignment tape after completion of the "linearity adjustment" (to adjust error rate to be almost approximate to the standard value), because it facilitates the adjustment of the "head REC current".

Note 5: *IThe value of the "head REC current" specified on the software is not always optimum.*

Note 6: *In the strict sense of the word, "approximation to the standard value" means a value that is slightly lower than the specified value. Specified values are as follows. CH1 or CH2: Less than 1,500 (less than 3,000 in total of CH1 and CH2) with the VITERBI function off. Difference between channels: Less than 10 times between CH1 and CH2.*

2.3.6 P.B. EQ. (error rate) adjustment (for SP and LP)

Procedure of P.B. EQ. (error rate) adjustment is shown by the following flowchart.



Record the built-in color bar signal (or EE picture) for about 5 minutes. **Note 7**

While playing back the recorded signal, adjust the P.B. EQ. of the "VTR deck" of the "Remote control utility" in the SP and LP modes respectively.
SP mode: VITERBI off, LP mode:VITERBI on. **Note 8**

Check to see if the measured error rate is minimum (approximation to the standard value) or not. **Note 6**

When the minimum error rate that is lower than the standard value is observed as a result of the adjustment, it is considered that the error rate adjustment is complete. **Note 6**

Note 7: *It is advised to use a new cassette tape or an unrecorded part of a used cassette tape for recording. If a damaged tape is used for recording, it results not only in an error of the error rate measurement (measurement result becomes considerably higher than the real value) but also in loss of the reliability of adjustment.*

Note 8: *Switch off the VITERBI function in the playback mode, because it can be switched off in the playback mode only. If the VITERBI function is switched off in the playback mode, the switched-off status is automatically cancelled when playback is discontinued. Therefore, it is required to switch off the VITERBI function in every playback operation.*

2.3.7 Measurement method of P.B. EQ. (error rate)

Neither error rate jig (YTU93083) nor frequency counter is needed. Error rate is shown on the service support in three ways of video CH1, CH2 and total. When measuring error rate by channel, total the video and audio error rates on the same channel.

2.4 SERVICE NOTE

Use the following chart to manage mechanism parts that are removed for disassembling the mechanism.

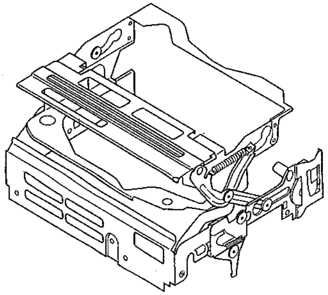
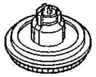
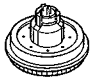
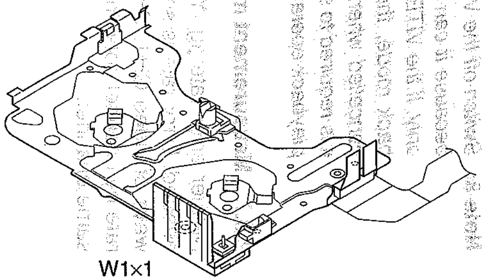
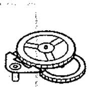
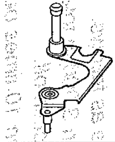
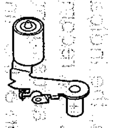
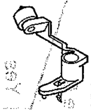
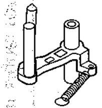
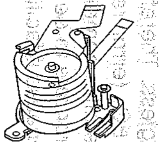
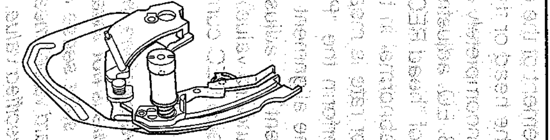
1	Ⓐ Cassette housing assembly  S1×3				
2	① Reel disk (SUP) assembly  W1×1	② Reel disk (TU) assembly  W1×1	③ Reel cover assembly  S1×2 S2×1 W1×1		
3	④ Tension arm assembly W1×1	⑤ Release guide assembly	⑥ Idler arm assembly  W2×1	⑦ Guide arm assembly 	⑧ Pinch roller arm assembly  W1×1
4	⑨ Cleaner arm assembly 	⑩ Slant pole arm assembly  W1×1 P1×1 P2×1	⑪ Drum assembly  S2×3		
5	⑫ Guide roller (S) assembly P3×1	⑬ Rail assembly  W1×3			

Table 2-4-1

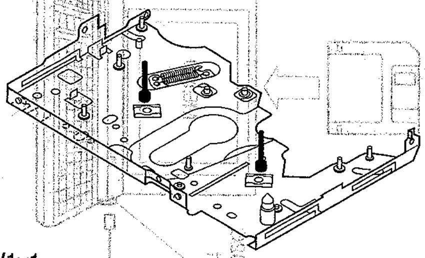
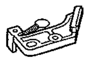
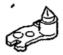
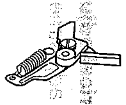
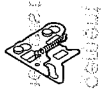
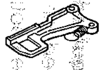
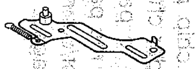
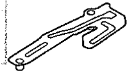
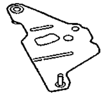
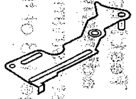
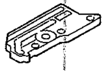
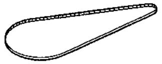
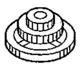
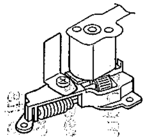
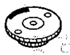
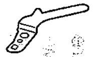
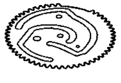
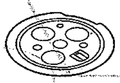
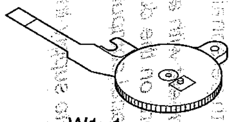
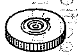
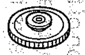
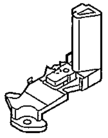
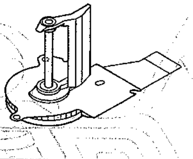
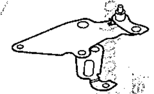
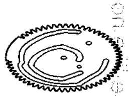
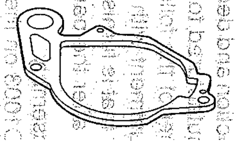
6	Ⓑ Slide deck assembly  W1×1	7	⑭ Loading brake assembly  W1×1 P4×1	⑮ Guide pin (SUPPLY)  S2×1	⑯ Pad arm assembly  W1×1 P5×1	⑰ Slide guide plate assembly  S3×1
			⑱ Collar 	⑲ Collar 	⑳ Sub brake assembly  W1×1 P6×1	㉑ Control plate assembly  W1×2 P7×1
8	㉒ Tension lever assembly 	㉓ Slide lever assembly 	㉔ Brake control lever assembly 			
9	㉕ Loading guide  S2×1	㉖ Timing belt 	㉗ Center gear assembly 	㉘ Motor bracket assembly  S2×2	㉙ Worm wheel  W1×1	㉚ Gear holder  S2×1
10	㉛ Main cam gear  S2×1	㉜ Brake control plate 	㉝ Rotary encoder  S2×1 W1×1	㉞ Connect gear  W1×1	㉟ Reel drive pulley assembly  W2×1	
11	㊱ Catcher (T) assembly  S2×2	㊲ Capstan motor  S2×2	㊳ Charge arm assembly  W1×1	㊴ Sub cam gear  S2×1	㊵ PWB holder  S2×2	

Table 2-4-2

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT

3.1.1 Precautions

Both the camera section and deck section of this model are designed and manufactured to be adjustment-free. However, if both or either of the following parts is replaced, it needs special adjustment with a personal computer at a JVC service center that is furnished with a complete set of service equipment after the part replacement.

- OP block assembly
- EEPROM (IC1003 on the MAIN board)

When there is some trouble in the electric circuit, it is required to detect the faulty part with specified test instruments first and then to proceed to repair, replacement and adjustment.

1. When checking a signal at a chip test point, be sure to use an IC clip or the like not to apply any stress to the test point.
   When replacing a chip part (IC in particular), completely remove solder chips from it and its periphery before proceeding to part replacement (in order to avoid exfoliation of the pattern).
2. Carefully disconnect/connect connectors because they are apt to get damaged.

3.1.2 Test instruments required for electrical adjustment

For test instruments required for electrical adjustment, refer to page 1-3 of the section 1.

3.1.3 Jigs and tools required for electrical adjustment

For jigs and tools required for electrical adjustment, refer to pages 1-2 and 1-3 of the section 1.

3.1.4 Setup

1. Setup for electrical adjustment with personal computer

NOTE 1: *As a general rule for adjustment with a personal computer, mount the camera on the docking station and connect a personal computer to its JLIP terminal.*

NOTE 2: *Use the DC cord (coupler) to supply the power.*

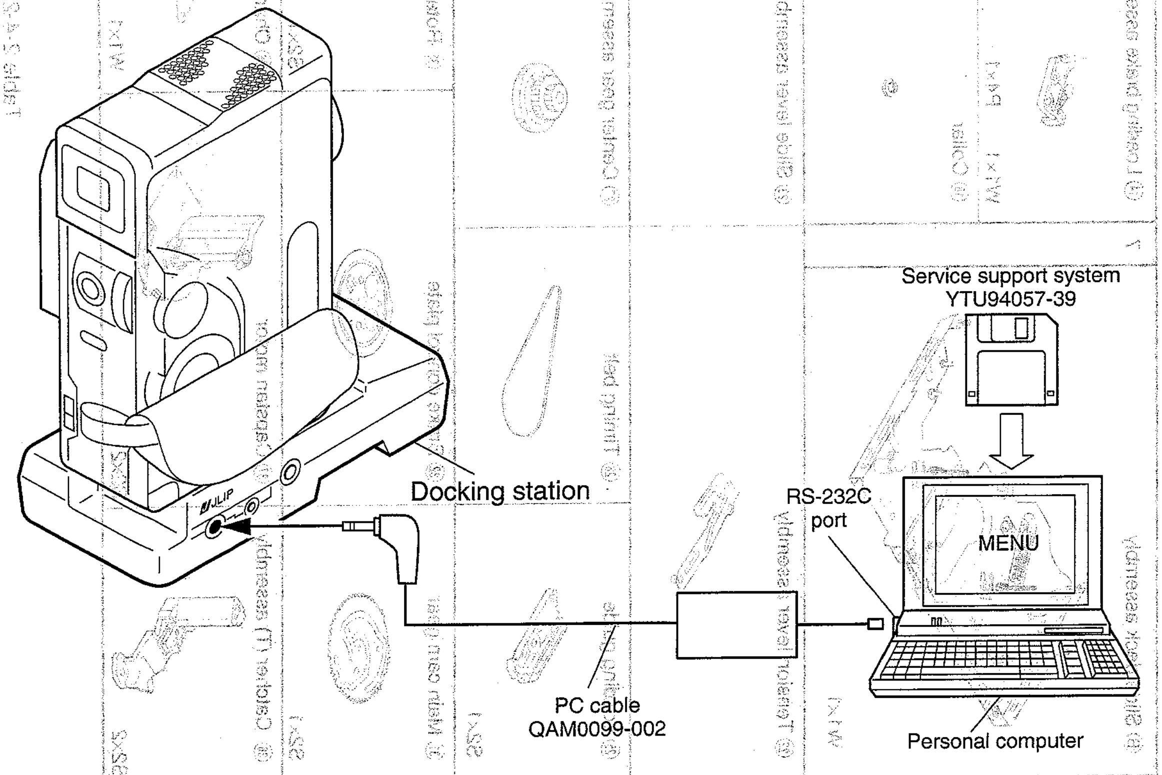


Fig. 3-1-1 Setup for electrical adjustment with personal computer (I)

2. Setup with patch cords and jig connector cables

NOTE:
Fig. 3-1-2 shows an example of expansion setup that facilitates inspection of major boards because main components are connected by means of patch cords and jig cables. For proceeding to electrical adjustment in such the setup, disassemble the set at a certain level required for the current adjustment objectives referring to the section 1 "DISASSEMBLY" and properly set up the expanded set and test instruments.

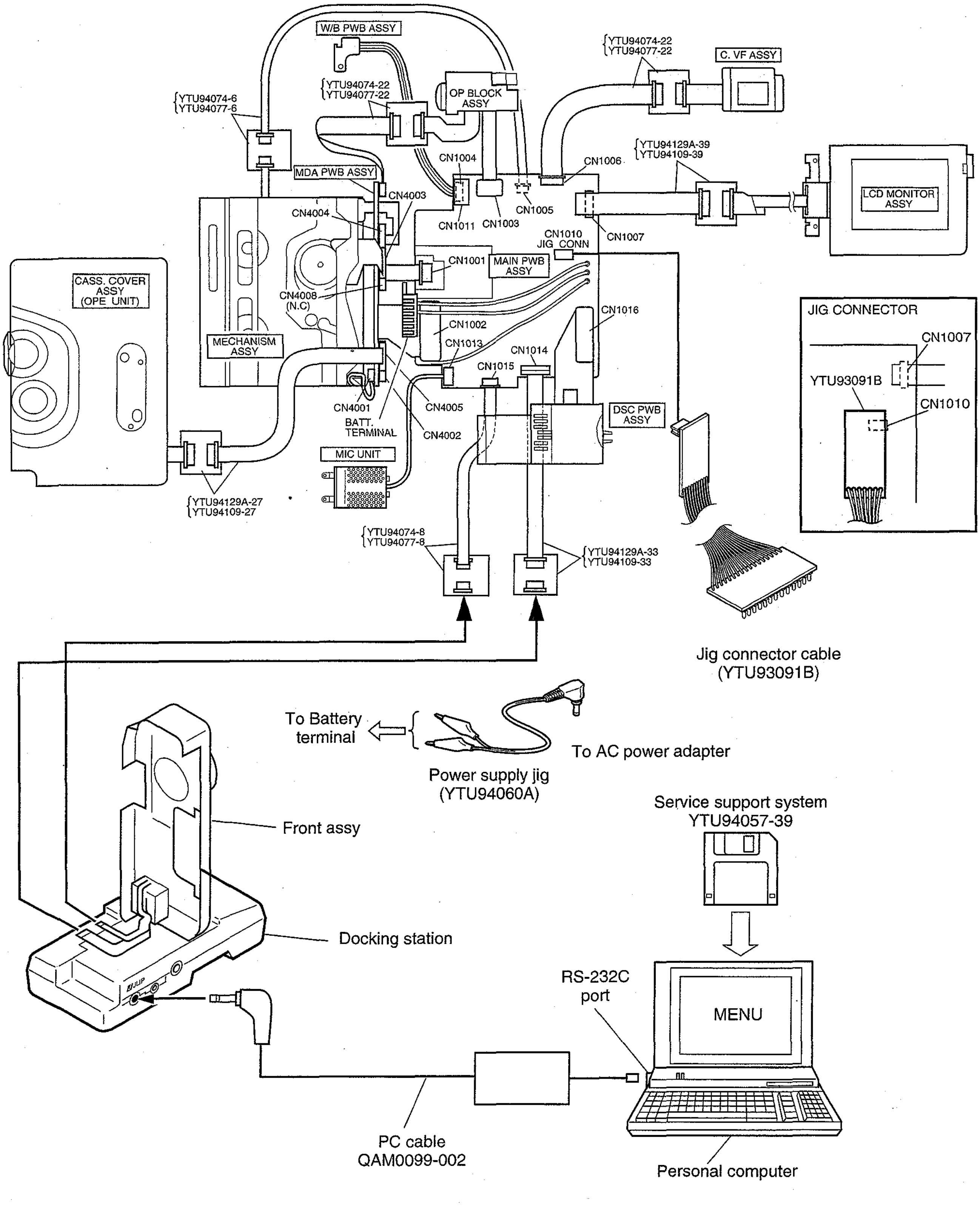

W/B PWB ASSY
YTU94074-22
YTU94077-22
OP BLOCK ASSY
YTU94074-6
YTU94077-6
YTU94074-22
YTU94077-22
C. VF ASSY
YTU94129A-39
YTU94109-39
LCD MONITOR ASSY
CN1004
CN1006
MDA PWB ASSY
CN4003
CN4004
CN1011
CN1003
CN1005
CN1010
JIG CONN
CN1007
CN1001
MAIN PWB ASSY
CASS. COVER ASSY (OPE UNIT)
CN4008 (N.C)
CN1016
CN1002
CN1013
CN1014
CN1015
MECHANISM ASSY
JIG CONNECTOR
CN1007
YTU93091B
CN1010
CN4001
BATT. TERMINAL
CN4005
CN4002
DSC PWB ASSY
MIC UNIT
YTU94129A-27
YTU94109-27
YTU94074-8
YTU94077-8
YTU94129A-33
YTU94109-33
Jig connector cable (YTU93091B)
To Battery terminal
To AC power adapter
Power supply jig (YTU94060A)
Front assy
Service support system YTU94057-39
Docking station
RS-232C port
MENU
PC cable QAM0099-002
Personal computer

Fig. 3-1-2 Setup for electrical adjustment with personal computer (II)

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

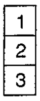
1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

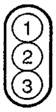
AUX : Active at high.

$\overline{\text{AUX}}$ or AUX(L) : Active at low.

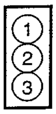
3. Interpreting Connector indications



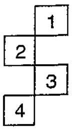
Removable connector



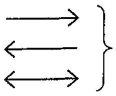
Wire soldered directly on board



Non-removable Board connector



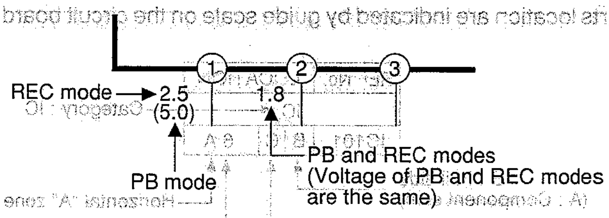
Board to Board



Connected pattern on board
The arrows indicate signal path

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Signal path Symbols

The arrows indicate the signal path as follows.

NOTE : The arrow is DVC unique object.

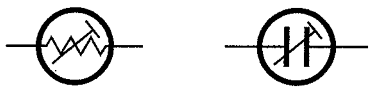
⇨	Playback signal path
⇨	Playback and recording signal path
➡	Recording signal path (including E-E signal path)
⇨▶	Capstan servo path
➡▶	Drum servo path

(Example)

⇨ R-Y	Playback R-Y signal path
➡ Y	Recording Y signal path

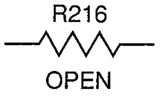
6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



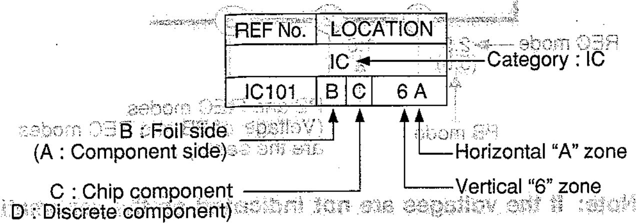
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

Parts location are indicated by guide scale on the circuit board.

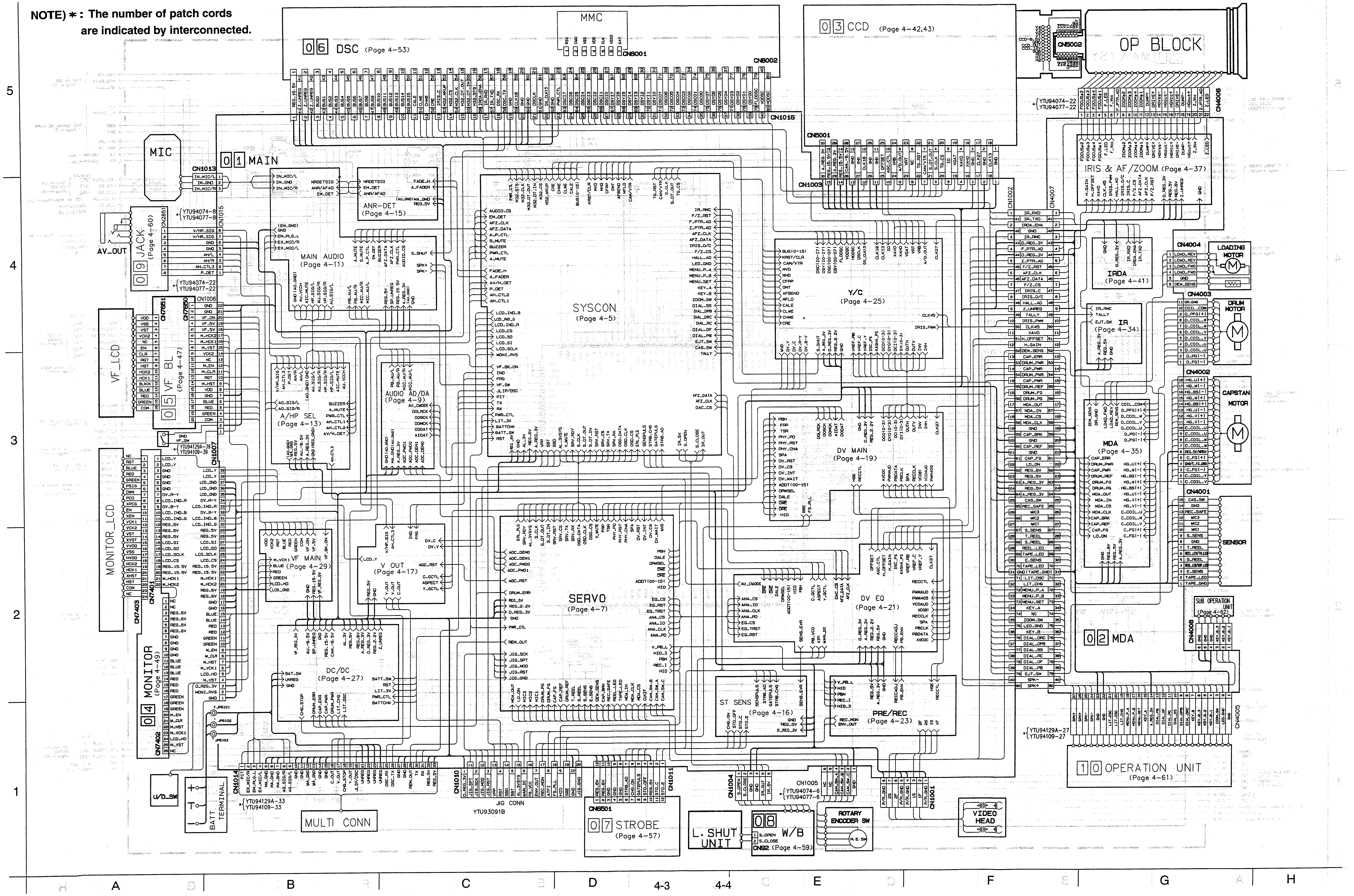


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
C : Chip component
D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

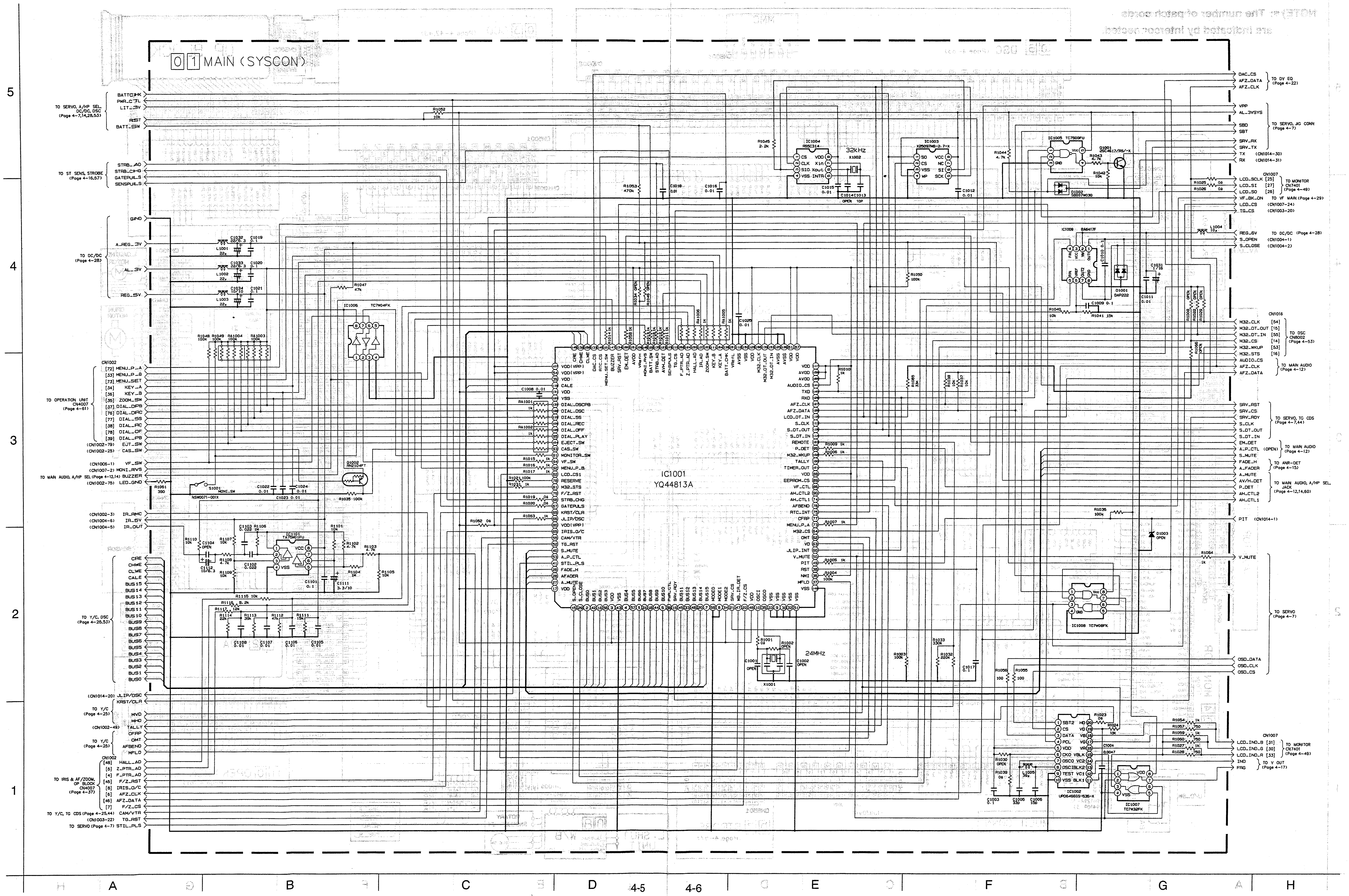
4.1 BOARD INTERCONNECTIONS

NOTE) ∗ : The number of patch cords are indicated by interconnected.

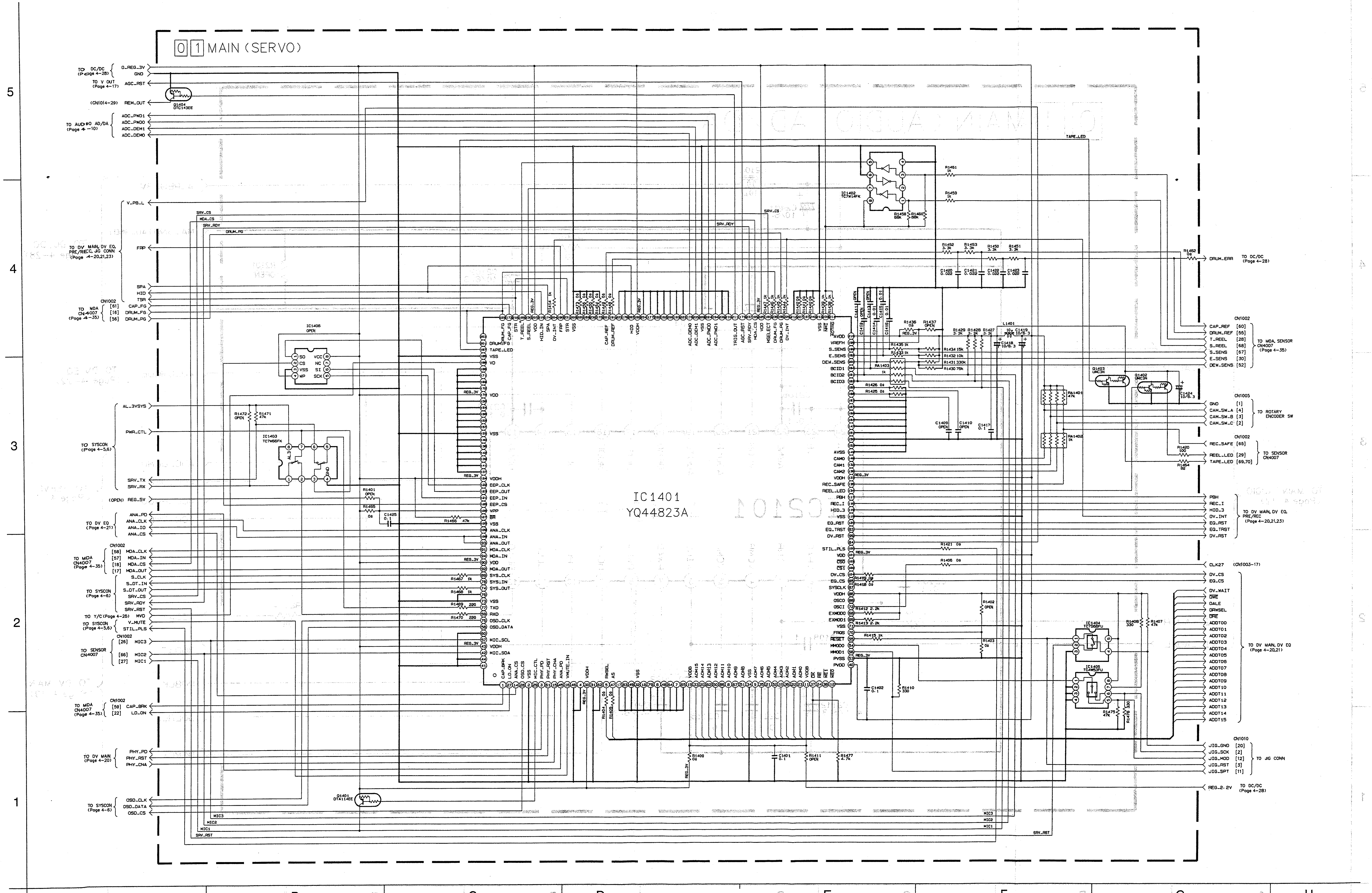


01 MAIN
02 MDA
03 CCD (Page 4-42,43)
04 MONITOR (Page 4-49)
05 VF_BL (Page 4-47)
06 DSC (Page 4-53)
07 STROBE (Page 4-57)
08 W/B (Page 4-59)
09 JACK (Page 4-60)
10 OPERATION UNIT (Page 4-61)
MMC
OP BLOCK
MIC
AV_OUT
VF_LCD
MONITOR_LCD
SYSCON (Page 4-5)
SERVO (Page 4-7)
MAIN AUDIO (Page 4-11)
ANR-DET (Page 4-15)
A/HP SEL (Page 4-13)
AUDIO AD/DA (Page 4-9)
VF MAIN (Page 4-29)
V OUT (Page 4-17)
DC/DC (Page 4-27)
Y/C (Page 4-25)
DV MAIN (Page 4-19)
DV EQ (Page 4-21)
ST SENS (Page 4-16)
PRE/REC (Page 4-23)
IRIS & AF/ZOOM (Page 4-37)
IRDA (Page 4-41)
IR (Page 4-34)
MDA (Page 4-35)
LOADING MOTOR
DRUM MOTOR
CAPSTAN MOTOR
SENSOR
SUB OPERATION UNIT (Page 4-62)
MULTI CONN
U/D_SW
BATT. TERMINAL
L.SHUT UNIT
ROTARY ENCODER SW
VIDEO HEAD
JIG CONN YTU93091B
CN1001
CN1002
CN1003
CN1004
CN1005
CN1006
CN1007
CN1010
CN1011
CN1013
CN1014
CN1015
CN1016
CN2851
CN4001
CN4002
CN4003
CN4004
CN4005
CN4006
CN4007
CN4008
CN5001
CN5002
CN6501
CN7401
CN7402
CN7403
CN7551
CN7550
CN8001
CN8002
CN92
YTU94074-22 / YTU94077-22
YTU94074-8 / YTU94077-8
YTU94129A-39 / YTU94109-39
YTU94129A-33 / YTU94109-33
YTU94129A-27 / YTU94109-27
YTU94074-6 / YTU94077-6
1
2
3
4
5
A
B
C
D
E
F
G
H

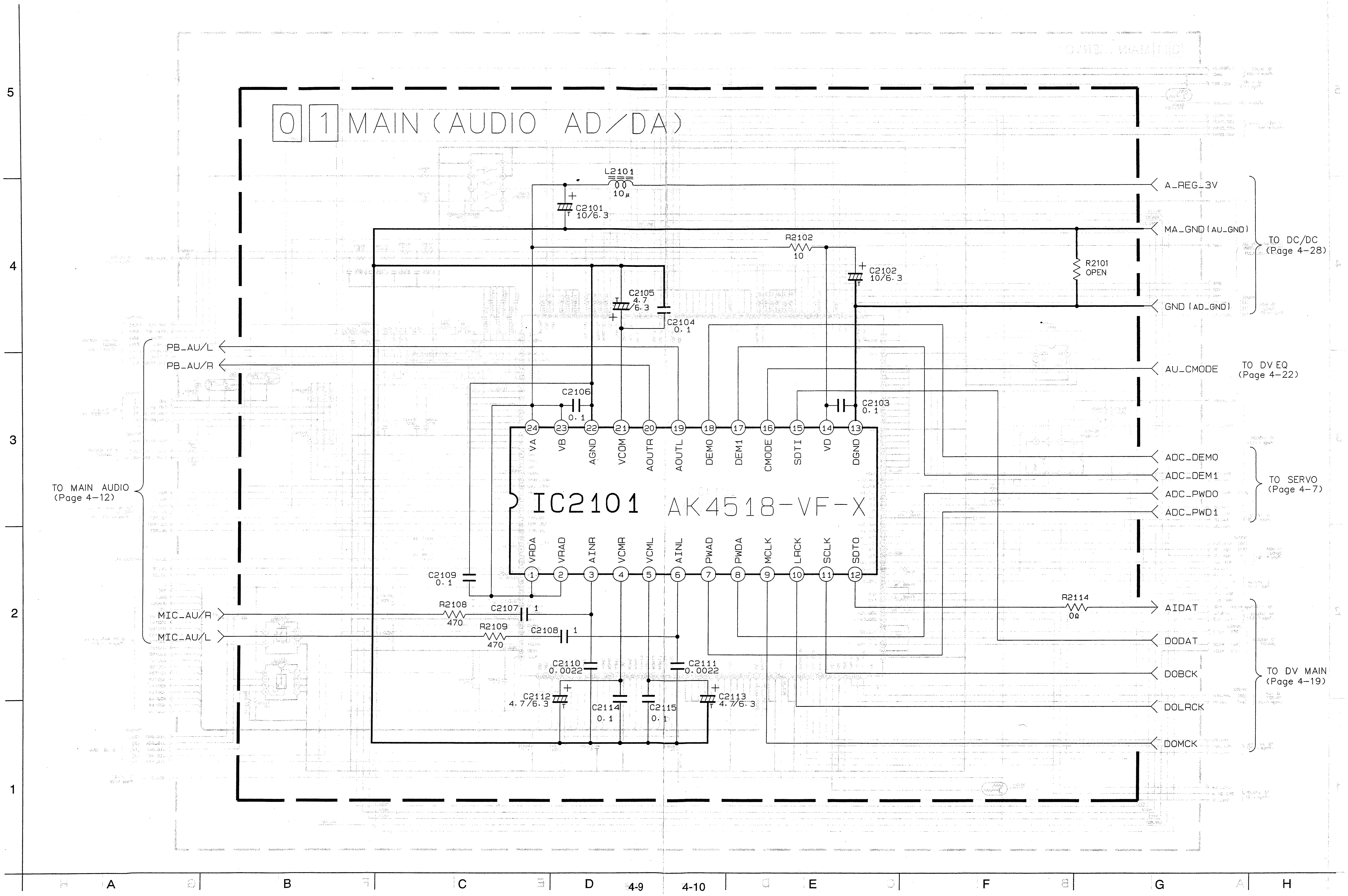
4.2 SYSCON SCHEMATIC DIAGRAM


01 MAIN (SYSCON)
IC1001
YQ44813A
IC1004 RS5C314
IC1003 X25097MB-2.7-X
IC1005 TC7S00FU
Q1001 2SC4617/RS/-X
D1002 SB007W03Q
IC1009 BA6417F
D1001 DAP222
IC1006 TC7W04FK
Q1002 RN2104FT
S1001 MENU_SW
IC1101 TA75W01FU
X1001 24MHz
X1002 32kHz
IC1008 TC7W08FK
IC1002 UPD6466GS-535-X
IC1007 TC7W32FK
D1003 OPEN
TO SERVO, A/HP SEL, DC/DC, DSC (Page 4-7,14,28,53)
BATT_CHK
PWR_CTL
LIT_3V
RST
BATT_SW
TO ST SENS, STROBE (Page 4-16,57)
STRB_AD
STRB_CHG
GATEPULS
SENSPULS
TO DC/DC (Page 4-28)
GND
A_REG_3V
AL_3V
REG_5V
TO OPERATION UNIT CN4007 (Page 4-61)
CN1002
MENU_P_A
MENU_P_B
MENU_SET
KEY_A
KEY_B
ZOOM_SW
DIAL_DPB
DIAL_DRC
DIAL_5S
DIAL_RC
DIAL_OF
DIAL_PB
EJT_SW
CAS_SW
VF_SW
MONI_RVS
TO MAIN AUDIO, A/HP SEL (Page 4-12,14) BUZZER
LED_GND
IR_RMC
IR_5V
IR_OUT
TO Y/C, DSC (Page 4-26,53)
CPE
CHWE
CLWE
CALE
BUS15
BUS14
BUS13
BUS12
BUS11
BUS10
BUS9
BUS8
BUS7
BUS6
BUS5
BUS4
BUS3
BUS2
BUS1
BUS0
JLIP/DSC
KRST/CLR
TO Y/C (Page 4-25)
MVD
MHD
TALLY
CFRP
OMT
AFBEND
MFLD
TO IRIS & AF/ZOOM, OP BLOCK CN4007 (Page 4-37)
HALL_AD
Z_PTR_AD
F_PTR_AD
F/Z_RST
IRIS_O/C
AFZ_CLK
AFZ_DATA
F/Z_CS
TO Y/C, TG CDS (Page 4-25,44) CAM/VTR
TG_RST
TO SERVO (Page 4-7) STIL_PLS
DAC_CS
AFZ_DATA
AFZ_CLK
TO DV EQ (Page 4-22)
VPP
AL_3VSYS
SBD
SBT
TO SERVO, JIG CONN (Page 4-7)
SRV_RX
SRV_TX
TX (CN1014-30)
RX (CN1014-31)
CN1007
LCD_SCLK
LCD_SI
LCD_SO
TO MONITOR CN7401 (Page 4-49)
VF_BK_ON TO VF MAIN (Page 4-29)
LCD_CS
TG_CS
REG_6V TO DC/DC (Page 4-28)
S_OPEN
S_CLOSE
CN1016
M32_CLK
M32_DT_OUT
M32_DT_IN
M32_CS
M32_WKUP
M32_STS
TO DSC CN8002 (Page 4-53)
AUDIO_CS
AFZ_CLK
AFZ_DATA
TO MAIN AUDIO (Page 4-12)
SRV_RST
SRV_CS
SRV_RDY
S_CLK
S_DT_OUT
S_DT_IN
TO SERVO, TG CDS (Page 4-7,44)
EM_DET
A_P_CTL
S_MUTE
TO MAIN AUDIO (Page 4-12)
FADE_H
A_FADER
TO ANR-DET (Page 4-15)
A_MUTE
AV/H_DET
P_DET
AH_CTL2
AH_CTL1
TO MAIN AUDIO, A/HP SEL, JACK (Page 4-12,14,60)
PIT (CN1014-1)
V_MUTE
TO SERVO (Page 4-7)
OSD_DATA
OSD_CLK
OSD_CS
LCD_IND_B
LCD_IND_G
LCD_IND_R
TO MONITOR CN7401 (Page 4-49)
IND
FRG
TO V OUT (Page 4-17)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.3 SERVO SCHEMATIC DIAGRAM

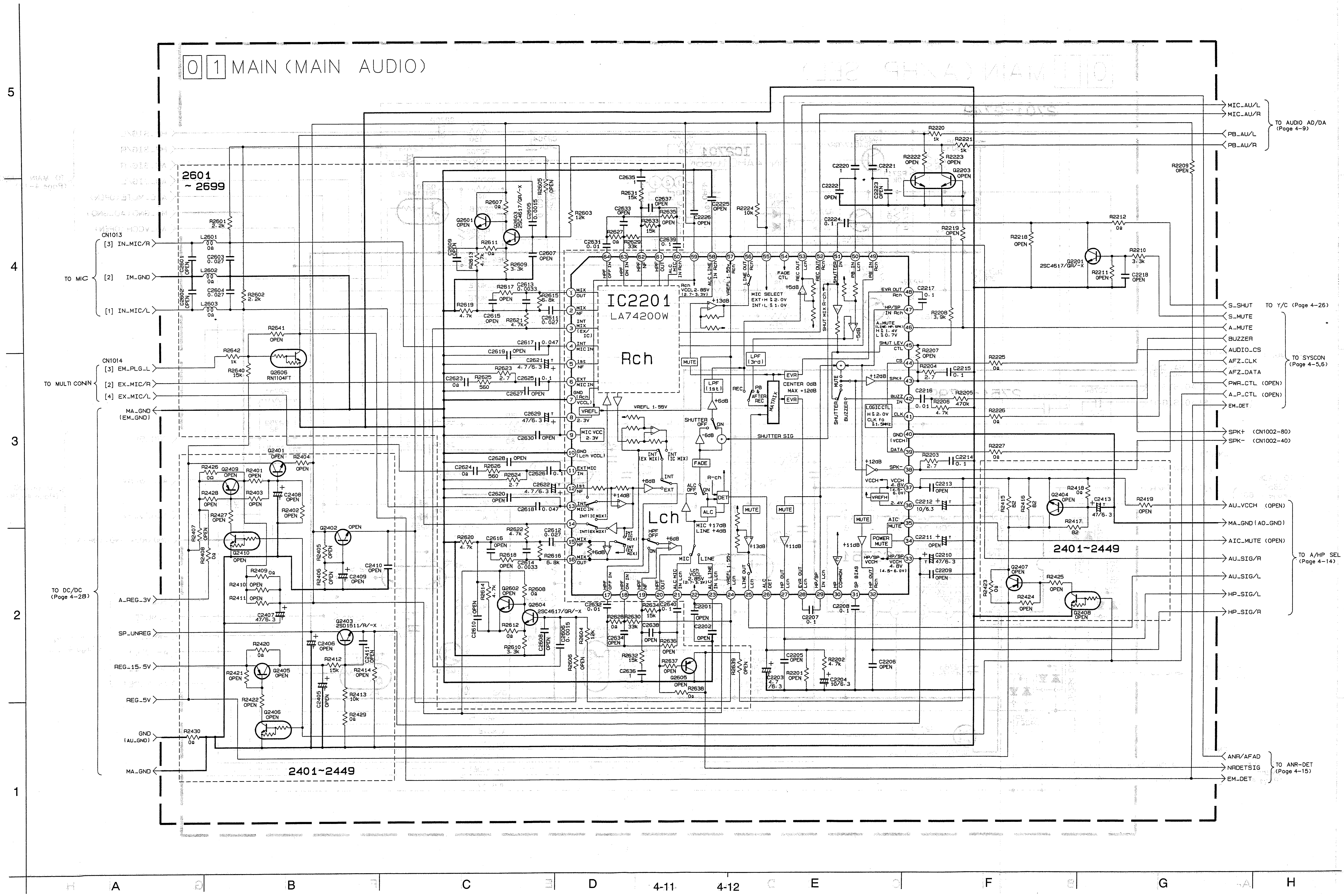

01 MAIN (SERVO)
TO DC/DC (Page 4-28)
D_REG_3V
GND
TO V OUT (Page 4-17)
AGC_RST
(CN1014-29)
REM_OUT
Q1404 DTC143EE
TO AUDIO AD/DA (Page 4-10)
ADC_PWD1
ADC_PWD0
ADC_DEM1
ADC_DEM0
V_PB_L
TO DV MAIN, DV EQ, PRE/REC, JIG CONN. (Page 4-20,21,23)
FRP
SPA
HID
TSR
TO MDA CN4007 (Page 4-35)
CN1002
CAP_FG
DRUM_FG
DRUM_PG
SRV_CS
MDA_CS
SRV_RDY
DRUM_PG
IC1406 OPEN
SO VCC
CS NC
VSS SI
WP SCK
AL_3VSYS
PWR_CTL
TO SYSCON (Page 4-5,6)
SRV_TX
SRV_RX
R1472 OPEN
R1471 47k
IC1403 TC7W66FK
(OPEN) REG_5V
TO DV EQ (Page 4-21)
ANA_PD
ANA_CLK
ANA_IO
ANA_CS
MDA_CLK
MDA_IN
MDA_CS
MDA_OUT
S_CLK
S_DT_IN
S_DT_OUT
SRV_CS
SRV_RDY
SRV_RST
TO Y/C (Page 4-26)
MVD
V_MUTE
STIL_PLS
TO SENSOR CN4007
MIC3
MIC2
MIC1
CAP_BRK
LD_ON
TO DV MAIN (Page 4-20)
PHY_PD
PHY_RST
PHY_CNA
Q1401 DTA114EE
OSD_CLK
OSD_DATA
OSD_CS
SRV_RST
R1401 OPEN
R1465 0Ω
C1425 0.1
R1466 47k
R1467 1k
R1468 1k
R1469 220
R1470 220
REG_3V
IC1401
YQ44823A
DRUM_FG
TAPE_LED
VSS
VD
VDD
VDDH
EEP_CLK
EEP_OUT
EEP_IN
EEP_CS
VPP
ANA_CLK
ANA_IN
ANA_OUT
MDA_CLK
MDA_IN
MDA_OUT
SYS_CLK
SYS_IN
SYS_OUT
TXD
RXD
OSD_CLK
OSD_DATA
MIC_SCL
MIC_SDA
AVDD
VREFH
S_SENS
E_SENS
DEW_SENS
BCID1
BCID2
BCID3
AVSS
CAM0
CAM1
CAM2
REC_SAFE
REEL_LED
PBH
REC_I
HID_3
DV_INT
EQ_RST
EQ_TRST
DV_RST
STIL_PLS
DV_CS
EQ_CS
SYSCLK
OSCO
OSCI
EXMOD0
EXMOD1
FRQS
RESET
MMOD0
MMOD1
PVSS
PVDD
IC1402 TC7W14FK
R1461 1k
R1459 1k
R1458 56k
R1460 56k
SRV_CS
SRV_RDY
TAPE_LED
R1452 3.3k
R1453 3.3k
R1450 3.3k
R1451 3.3k
C1420 0.022
C1421 0.022
C1422 0.022
C1423 0.022
R1462 0Ω
DRUM_ERR
TO DC/DC (Page 4-28)
R1436 0Ω
R1437 OPEN
R1429 3.3k
R1428 3.3k
R1427 3.3k
L1401 10μ
C1419 10/6.3
C1418 10/6.3
R1435 1k
R1433 1k
R1434 15k
R1432 10k
R1431 330k
R1430 75k
RA1403 1k
R1426 0Ω
R1425 0Ω
CN1002
CAP_REF
DRUM_REF
T_REEL
S_REEL
S_SENS
E_SENS
DEW_SENS
TO MDA, SENSOR CN4007 (Page 4-35)
Q1403 UMC3N
Q1402 UMC3N
C1424 10/6.3
RA1401 47k
RA1402 1k
CN1005
GND
CAM_SW_A
CAM_SW_B
CAM_SW_C
TO ROTARY ENCODER SW
C1409 OPEN
C1410 OPEN
C1417 0.1
REC_SAFE
R1420 100
REEL_LED
R1454 82
TAPE_LED
TO SENSOR CN4007
PBH
REC_I
HID_3
DV_INT
EQ_RST
EQ_TRST
DV_RST
TO DV MAIN, DV EQ, PRE/REC (Page 4-20,21,23)
R1421 0Ω
R1406 0Ω
CLK27
(CN1003-17)
R1455 0Ω
R1418 0Ω
R1412 2.2k
R1413 2.2k
R1415 1k
R1402 OPEN
R1403 0Ω
DV_CS
EQ_CS
DV_WAIT
DWE
DALE
DRWSEL
DRE
ADDT00
ADDT01
ADDT02
ADDT03
ADDT04
ADDT05
ADDT06
ADDT07
ADDT08
ADDT09
ADDT10
ADDT11
ADDT12
ADDT13
ADDT14
ADDT15
TO DV MAIN, DV EQ (Page 4-20,21)
IC1404 TC7S66FU
IC1405 TC4W53FU
R1408 330
R1407 47k
R1475 47k
R1476 330
C1402 0.1
R1410 330
R1409 0Ω
C1401 0.1
R1411 OPEN
R1477 2.7k
CN1010
JIG_GND
JIG_SCK
JIG_MOD
JIG_RST
JIG_SPT
TO JIG CONN
REG_2.2V
TO DC/DC (Page 4-28)
MIC3
MIC2
MIC1
SRV_RST
5
4
3
2
1
H
A
B
C
D
E
F
G
H

4.4 AUDIO AD/DA SCHEMATIC DIAGRAM

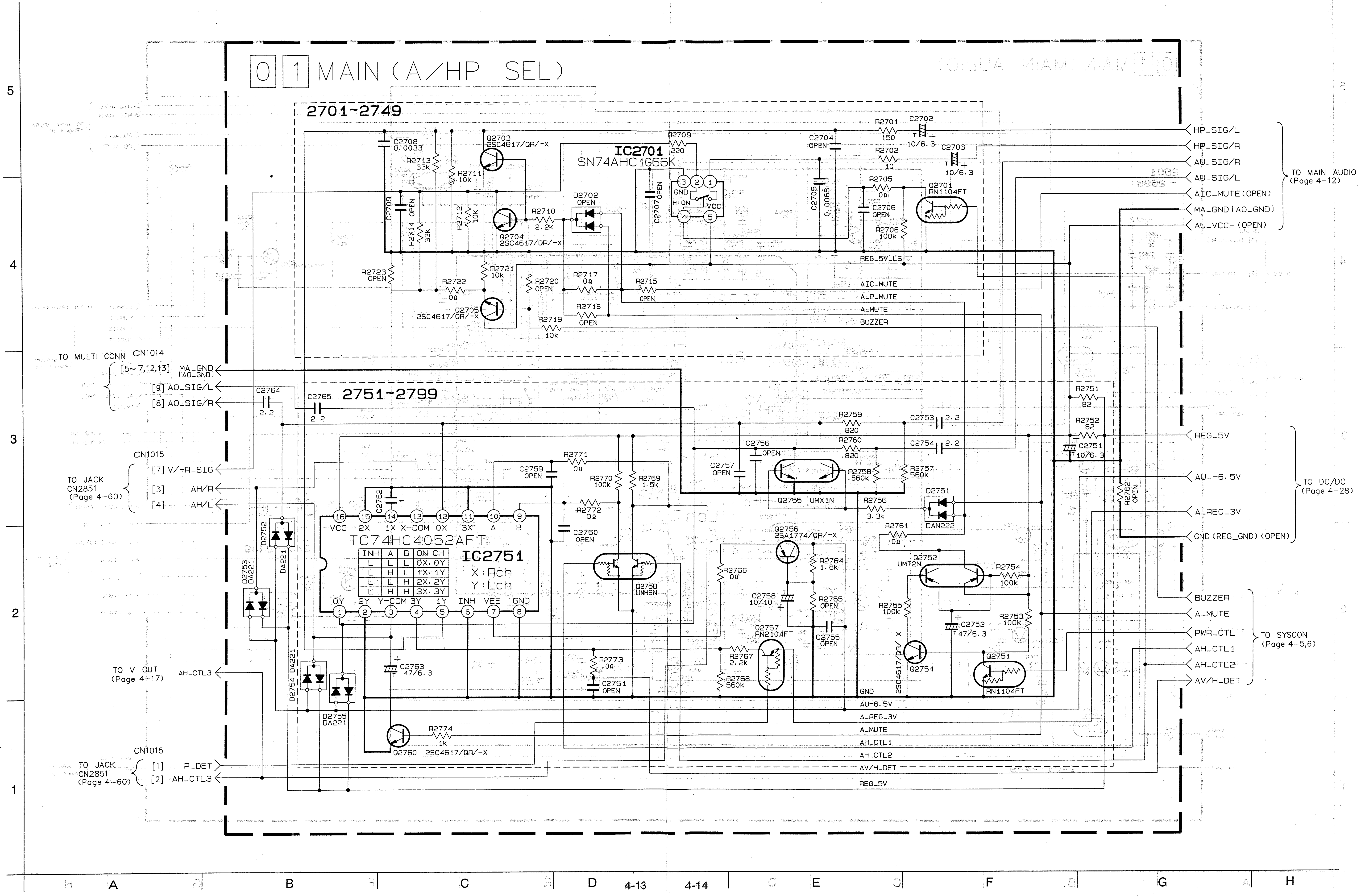


0 1 MAIN (AUDIO AD/DA)
L2101
10μ
C2101
10/6.3
R2102
10
C2102
10/6.3
R2101
OPEN
C2105
4.7
/6.3
C2104
0.1
C2106
0.1
C2103
0.1
A_REG_3V
MA_GND (AU_GND)
GND (AD_GND)
TO DC/DC
(Page 4-28)
AU_CMODE
TO DV EQ
(Page 4-22)
PB_AU/L
PB_AU/R
TO MAIN AUDIO
(Page 4-12)
24 VA
23 VB
22 AGND
21 VCOM
20 AOUTR
19 AOUTL
18 DEMO
17 DEM1
16 CMODE
15 SDTI
14 VD
13 DGND
IC2101 AK4518-VF-X
1 VRDA
2 VRAD
3 AINR
4 VCMR
5 VCML
6 AINL
7 PWAD
8 PWDA
9 MCLK
10 LRCK
11 SCLK
12 SDTO
ADC_DEMO
ADC_DEM1
ADC_PWDO
ADC_PWD1
TO SERVO
(Page 4-7)
C2109
0.1
R2108
470
C2107
1
R2109
470
C2108
1
MIC_AU/R
MIC_AU/L
C2110
0.0022
C2111
0.0022
C2112
4.7/6.3
C2114
0.1
C2115
0.1
C2113
4.7/6.3
R2114
0Ω
AIDAT
DODAT
DOBCK
DOLRCK
DOMCK
TO DV MAIN
(Page 4-19)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.5 MAIN AUDIO SCHEMATIC DIAGRAM

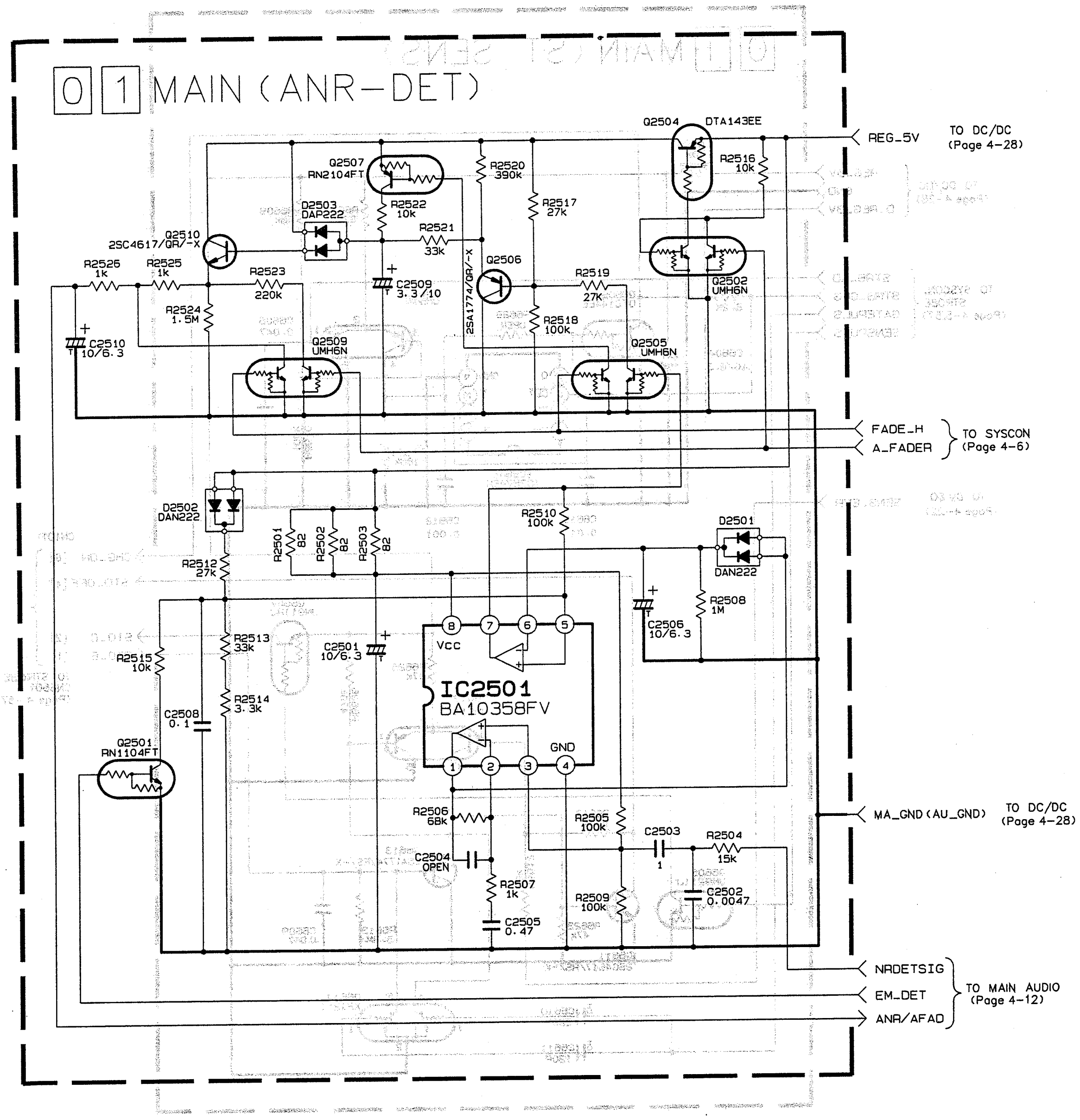

01 MAIN (MAIN AUDIO)
2601 ~ 2699
2401~2449
IC2201
LA74200W
Rch
Lch
CN1013
[3] IN_MIC/R
[2] IM_GND
[1] IN_MIC/L
TO MIC
CN1014
[3] EM_PLG_L
[2] EX_MIC/R
[4] EX_MIC/L
TO MULTI CONN
MA_GND (EM_GND)
TO DC/DC (Page 4-28)
A_REG_3V
SP_UNREG
REG_15.5V
REG_5V
GND (AU_GND)
MA_GND
MIC_AU/L
MIC_AU/R
PB_AU/L
PB_AU/R
TO AUDIO AD/DA (Page 4-9)
S_SHUT
TO Y/C (Page 4-26)
S_MUTE
A_MUTE
BUZZER
AUDIO_CS
AFZ_CLK
AFZ_DATA
PWR_CTL (OPEN)
A_P_CTL (OPEN)
EM_DET
TO SYSCON (Page 4-5,6)
SPK+ (CN1002-80)
SPK- (CN1002-40)
AU_VCCH (OPEN)
MA_GND (AO_GND)
AIC_MUTE (OPEN)
AU_SIG/R
AU_SIG/L
HP_SIG/L
HP_SIG/R
TO A/HP SEL (Page 4-14)
ANR/AFAD
NRDETSIG
EM_DET
TO ANR-DET (Page 4-15)
Q2601 OPEN
Q2603 2SC4617/QR/-X
Q2602 OPEN
Q2604 2SC4617/QR/-X
Q2605 OPEN
Q2606 RN1104FT
Q2201
Q2203 OPEN
Q2301 2SC4617/QR/-X
Q2401 OPEN
Q2402 OPEN
Q2403 2SD1511/R/-X
Q2404 OPEN
Q2405 OPEN
Q2406 OPEN
Q2407 OPEN
Q2408 OPEN
Q2409 OPEN
Q2410 OPEN
MIC OUT
MIX NF
INT MIX (EX/IC)
INT MIC IN
1st NF
EXT MIC IN
GND (Rch VCCL)
VREFL
MIC VCC 2.3V
GND (Lch VCCL)
EXTMIC IN
INT (EXMIX)
MUTE
LPF (1st)
LPF (3rd)
EVR
CENTER 0dB MAX +12dB
MATRIX
SHUTTER SIG
FADE
ALC
DET
LOGIC CTL
POWER MUTE
VREFH
EVR OUT Rch
HP/SP IN Rch
A_MUTE
SHUT LEV CTL
CS
SPK+
BUZZ IN
CLK
GND (VCCH)
DATA
SPK-
VCCH 4.8V (4.5~6.0V)
AIC MUTE
HP/SP VCCH
MIC SELECT EXT:H ≧ 2.0V INT:L ≦ 1.0V
VREFL 1.55V
Rch VCCL 2.85V (2.7~3.3V)
A B C D E F G H
1 2 3 4 5

4.6 A/HP SEL SCHEMATIC DIAGRAM

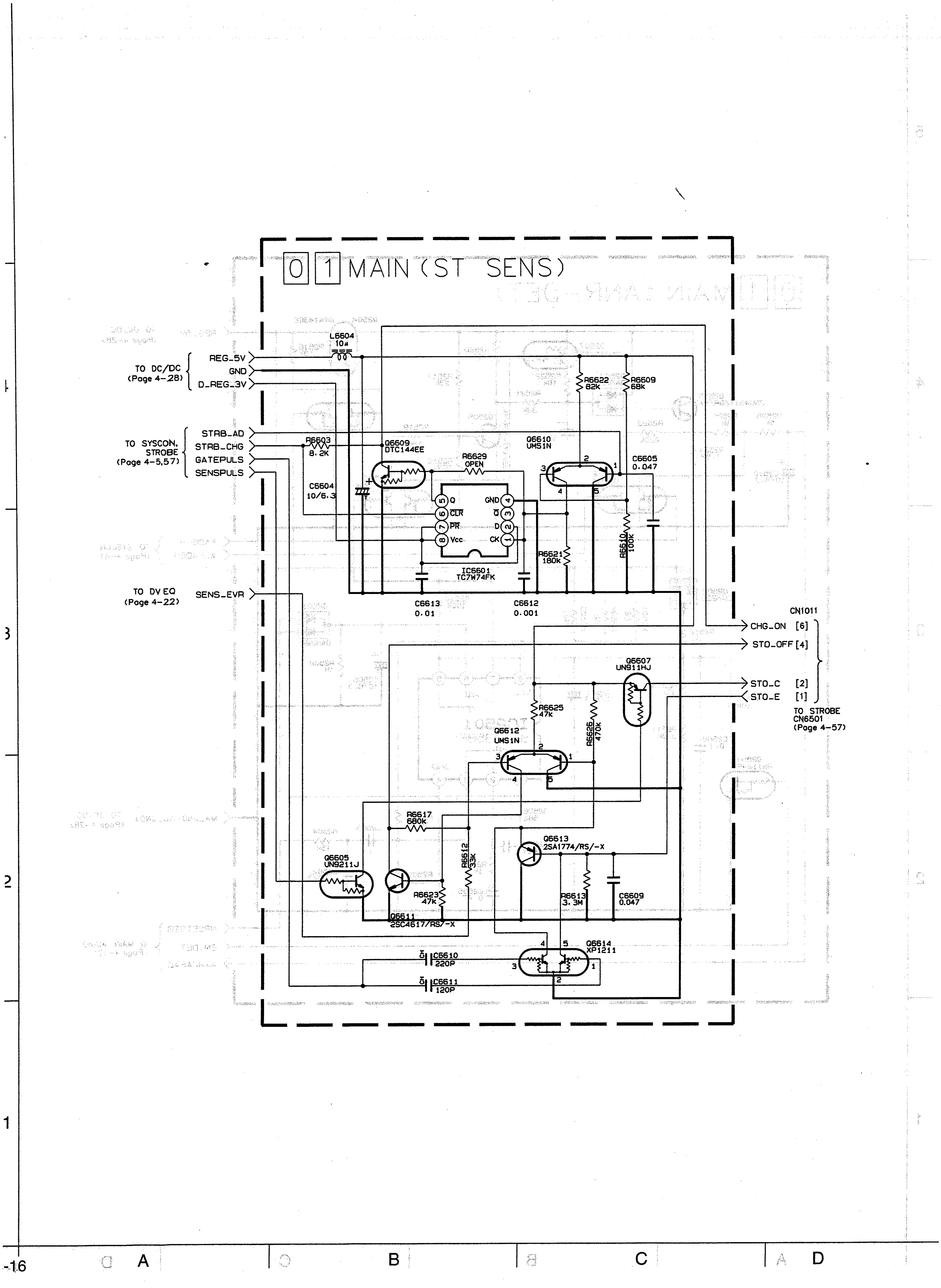


01 MAIN (A/HP SEL)
2701~2749
2751~2799
IC2701
SN74AHC1G66K
GND
H:ON
VCC
IC2751
TC74HC4052AFT
X:Rch
Y:Lch
VCC 2X 1X X-COM 0X 3X A B
0Y 2Y Y-COM 3Y 1Y INH VEE GND
INH A B ON CH
L L L 0X, 0Y
L H L 1X, 1Y
L L H 2X, 2Y
L H H 3X, 3Y
Q2701 RN1104FT
Q2703 2SC4617/QR/-X
Q2704 2SC4617/QR/-X
Q2705 2SC4617/QR/-X
Q2751 RN1104FT
Q2752 UMT2N
Q2754 2SC4617/QR/-X
Q2755 UMX1N
Q2756 2SA1774/QR/-X
Q2757 RN2104FT
Q2758 UMH6N
Q2760 2SC4617/QR/-X
D2702 OPEN
D2751 DAN222
D2752 DA221
D2753 DA221
D2754 DA221
D2755 DA221
R2701 150
R2702 10
R2705 0Ω
R2706 100k
R2709 220
R2710 2.2k
R2711 10k
R2712 10k
R2713 33k
R2714 33k
R2715 OPEN
R2717 0Ω
R2718 OPEN
R2719 10k
R2720 OPEN
R2721 10k
R2722 0Ω
R2723 OPEN
R2751 82
R2752 82
R2753 100k
R2754 100k
R2755 100k
R2756 3.3k
R2757 560k
R2758 560k
R2759 820
R2760 820
R2761 0Ω
R2762 OPEN
R2764 1.8k
R2765 OPEN
R2766 0Ω
R2767 2.2k
R2768 560k
R2769 1.5k
R2770 100k
R2771 0Ω
R2772 0Ω
R2773 0Ω
R2774 1k
C2702 10/6.3
C2703 10/6.3
C2704 OPEN
C2705 0.0068
C2706 OPEN
C2707 OPEN
C2708 0.0033
C2709 OPEN
C2751 10/6.3
C2752 47/6.3
C2753 2.2
C2754 2.2
C2755 OPEN
C2756 OPEN
C2757 OPEN
C2758 10/10
C2759 OPEN
C2760 OPEN
C2761 OPEN
C2762 1
C2763 47/6.3
C2764 2.2
C2765 2.2
REG_5V_LS
AIC_MUTE
A_P_MUTE
A_MUTE
BUZZER
GND
AU-6.5V
A_REG_3V
A_MUTE
AH_CTL1
AH_CTL2
AV/H_DET
REG_5V
HP_SIG/L
HP_SIG/R
AU_SIG/R
AU_SIG/L
AIC_MUTE (OPEN)
MA_GND (AO_GND)
AU_VCCH (OPEN)
TO MAIN AUDIO (Page 4-12)
REG_5V
AU_-6.5V
A_REG_3V
GND (REG_GND) (OPEN)
TO DC/DC (Page 4-28)
BUZZER
A_MUTE
PWR_CTL
AH_CTL1
AH_CTL2
AV/H_DET
TO SYSCON (Page 4-5,6)
TO MULTI CONN CN1014
[5~7,12,13] MA_GND (AO_GND)
[9] AO_SIG/L
[8] AO_SIG/R
TO JACK CN2851 (Page 4-60) CN1015
[7] V/HR_SIG
[3] AH/R
[4] AH/L
TO V OUT (Page 4-17) AH_CTL3
TO JACK CN2851 (Page 4-60) CN1015
[1] P_DET
[2] AH_CTL3
1
2
3
4
5
A
B
C
D
E
F
G
H

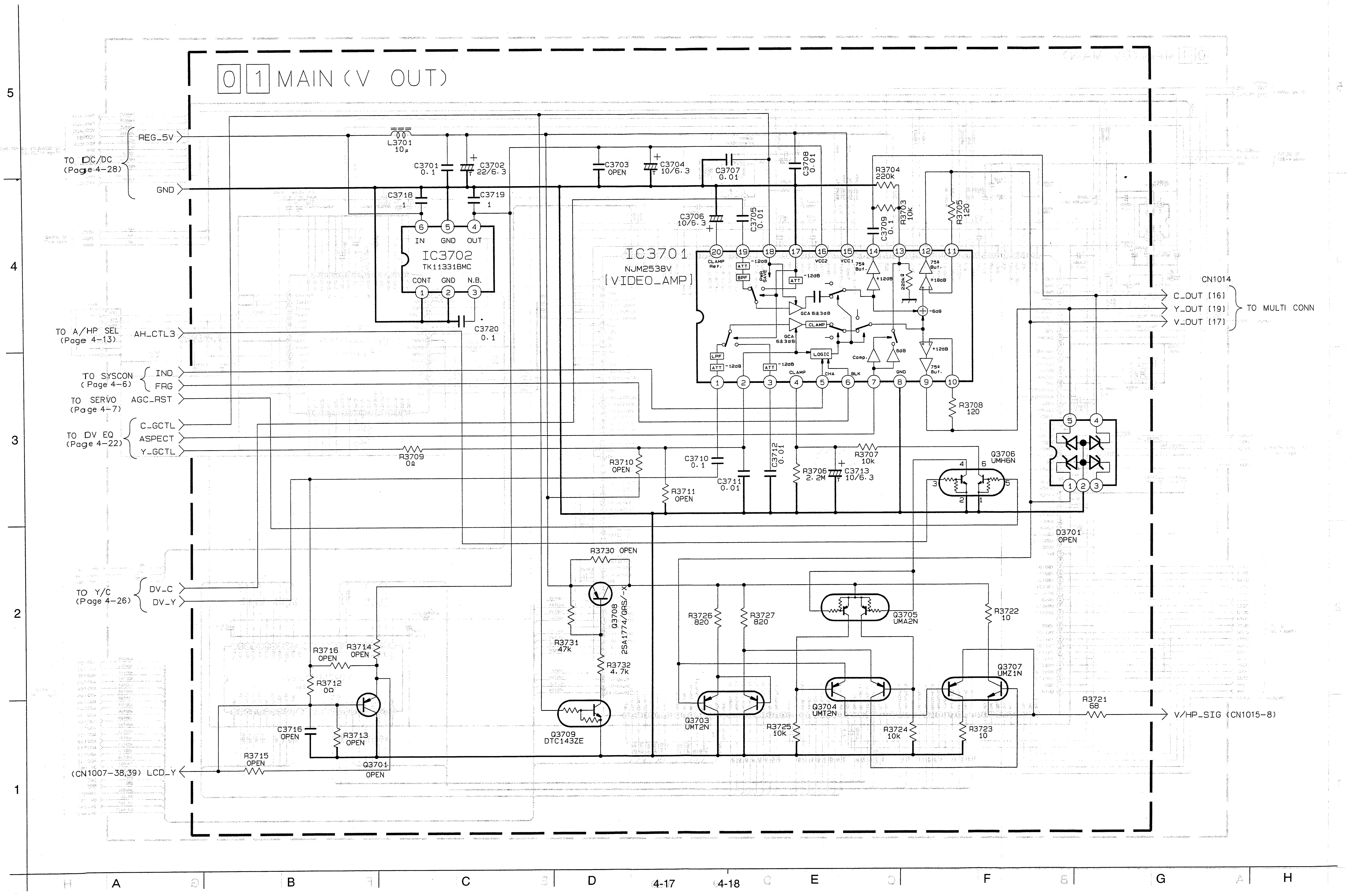
4.7 ANR-DET SCHEMATIC DIAGRAM


01 MAIN (ANR-DET)
Q2504 DTA143EE
R2516 10k
REG_5V
TO DC/DC (Page 4-28)
Q2507 RN2104FT
R2520 390k
R2522 10k
D2503 DAP222
R2517 27k
R2521 33k
Q2510 2SC4617/QR/-X
Q2506
2SA1774/QR/-X
R2526 1k
R2525 1k
R2523 220k
C2509 3.3/10
R2519 27K
Q2502 UMH6N
R2524 1.5M
R2518 100k
C2510 10/6.3
Q2509 UMH6N
Q2505 UMH6N
FADE_H
A_FADER
TO SYSCON (Page 4-6)
D2502 DAN222
R2510 100k
D2501
R2501 82
R2502 82
R2503 82
DAN222
R2512 27K
R2508 1M
C2506 10/6.3
R2513 33k
C2501 10/6.3
VCC
R2515 10k
IC2501
BA10358FV
R2514 3.3k
C2508 0.1
GND
Q2501 RN1104FT
R2506 68k
R2505 100k
MA_GND (AU_GND)
TO DC/DC (Page 4-28)
C2503 1
R2504 15k
C2504 OPEN
R2507 1k
C2502 0.0047
R2509 100k
C2505 0.47
NRDETSIG
EM_DET
ANR/AFAD
TO MAIN AUDIO (Page 4-12)
5
4
3
2
1
A
B
C
D

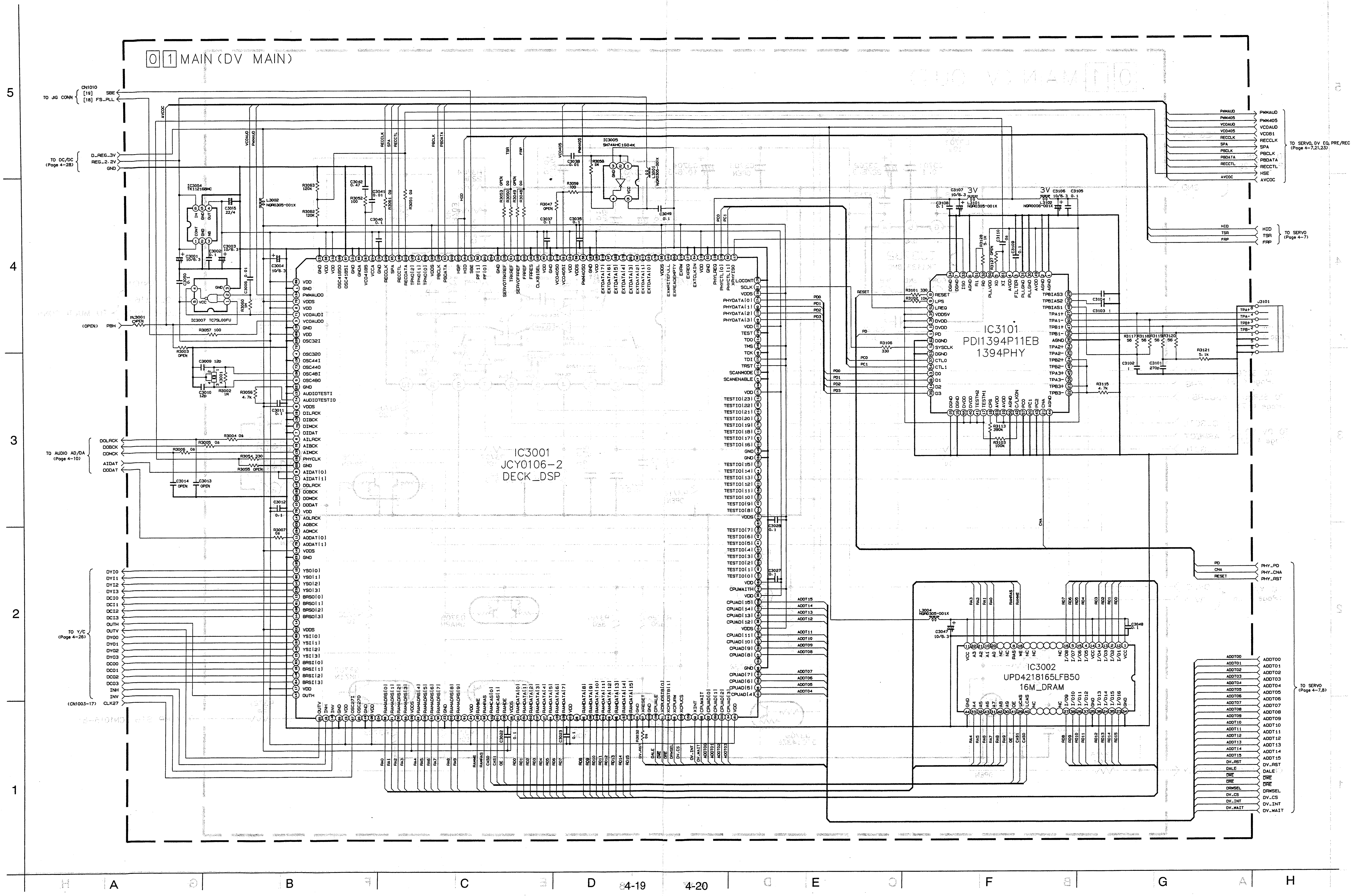
4.8 ST SENS SCHEMATIC DIAGRAM


0 1 MAIN (ST SENS)
TO DC/DC (Page 4-28)
REG_5V
GND
D_REG_3V
TO SYSCON, STROBE (Page 4-5,57)
STRB_AD
STRB_CHG
GATEPULS
SENSPULS
TO DV EQ (Page 4-22)
SENS_EVR
L6604 10µ
R6603 8.2K
C6604 10/6.3
Q6609 DTC144EE
R6629 OPEN
IC6601 TC7W74FK
Q
CLR
PR
Vcc
GND
Q
D
CK
C6613 0.01
C6612 0.001
R6622 82K
R6609 68K
Q6610 UMS1N
C6605 0.047
R6621 180K
R6610 100K
CN1011
CHG_ON [6]
STO_OFF [4]
STO_C [2]
STO_E [1]
TO STROBE CN6501 (Page 4-57)
Q6607 UN911HJ
R6625 47K
R6626 470K
Q6612 UMS1N
R6617 680K
R6612 33K
Q6613 2SA1774/RS/-X
Q6605 UN9211J
R6623 47K
Q6611 2SC4617/RS/-X
R6613 3.3M
C6609 0.047
Q6614 XP1211
C6610 220P
C6611 120P
4
3
2
1
A
B
C
D

4.9 V OUT SCHEMATIC DIAGRAM

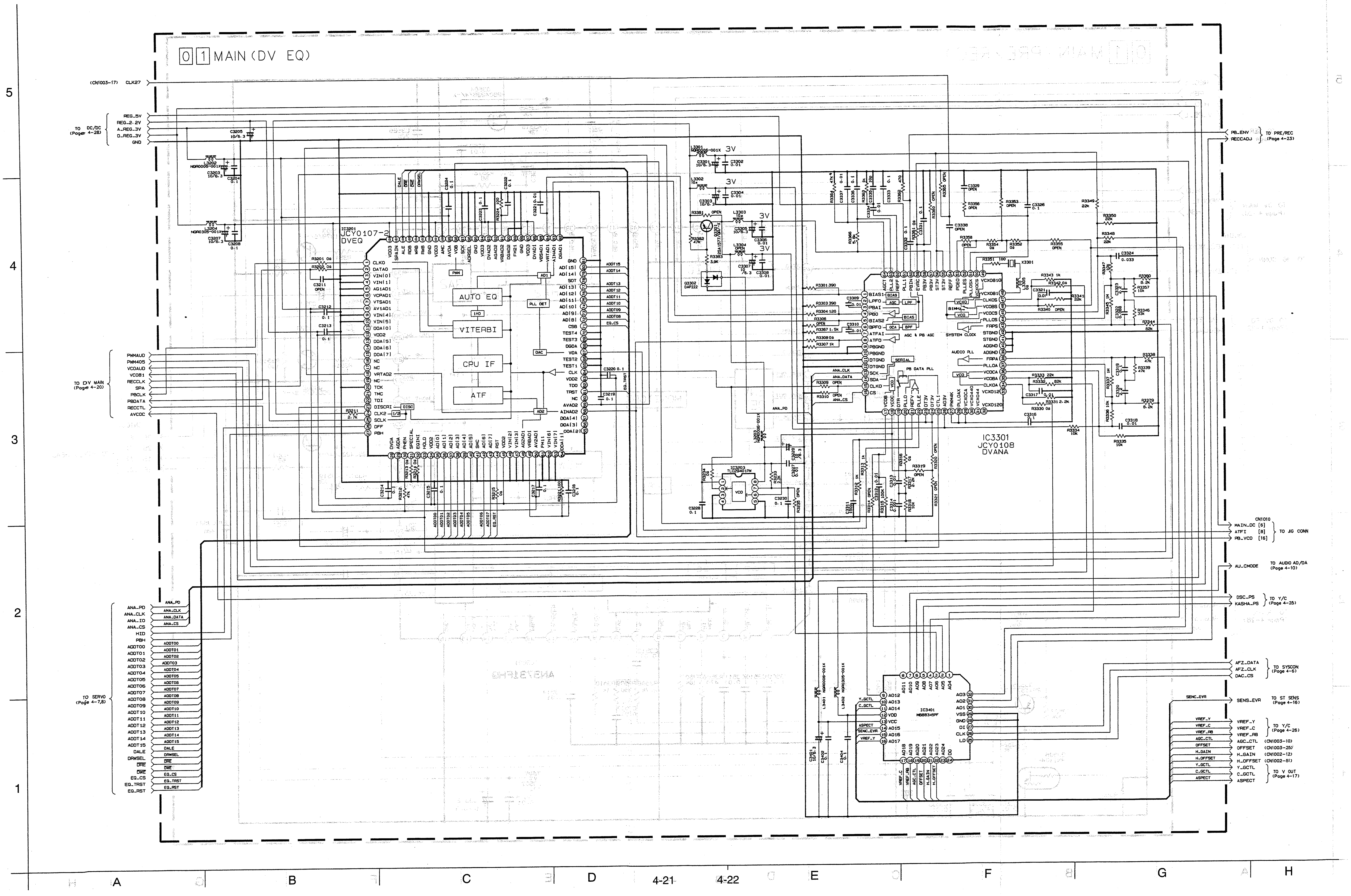

01 MAIN (V OUT)
TO DC/DC (Page 4-28)
REG_5V
GND
TO A/HP SEL (Page 4-13)
AH_CTL3
TO SYSCON (Page 4-6)
IND
FRG
TO SERVO (Page 4-7)
AGC_RST
TO DV EQ (Page 4-22)
C_GCTL
ASPECT
Y_GCTL
TO Y/C (Page 4-26)
DV_C
DV_Y
(CN1007-38,39) LCD_Y
L3701 10μ
C3701 0.1
C3702 22/6.3
C3718 1
C3719 1
C3720 0.1
IC3702 TK11331BMC
IN GND OUT
CONT GND N.B.
C3703 OPEN
C3704 10/6.3
C3707 0.01
C3708 0.01
C3706 10/6.3
C3705 0.01
C3709 0.1
R3704 220k
R3703 10k
R3705 120
IC3701 NJM2538V [VIDEO_AMP]
CLAMP Ref.
ATT -12dB
BPF
PNR SAVE
-12dB
ATT
VCC2
VCC1
75Ω Buf.
+12dB
220kΩ
75Ω Buf.
+18dB
-6dB
GCA 6±3dB
CLAMP
GCA 6±3dB
LPF
ATT -12dB
ATT -12dB
LOGIC
CLAMP
CHA
BLK
Comp.
6dB
+12dB
75Ω Buf.
GND
R3708 120
R3709 0Ω
R3710 OPEN
R3711 OPEN
C3710 0.1
C3711 0.01
C3712 0.01
R3706 2.2M
C3713 10/6.3
R3707 10k
Q3706 UMH6N
D3701 OPEN
CN1014
C_OUT [16]
Y_OUT [19]
V_OUT [17]
TO MULTI CONN
R3730 OPEN
Q3708 2SA1774/QRS/-X
R3731 47k
R3732 4.7k
Q3709 DTC143ZE
R3716 OPEN
R3714 OPEN
R3712 0Ω
C3716 OPEN
R3713 OPEN
R3715 OPEN
Q3701 OPEN
R3726 820
R3727 820
Q3705 UMA2N
R3722 10
Q3703 UMT2N
Q3704 UMT2N
Q3707 UMZ1N
R3725 10k
R3724 10k
R3723 10
R3721 68
V/HP_SIG (CN1015-8)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.10 DV MAIN SCHEMATIC DIAGRAM

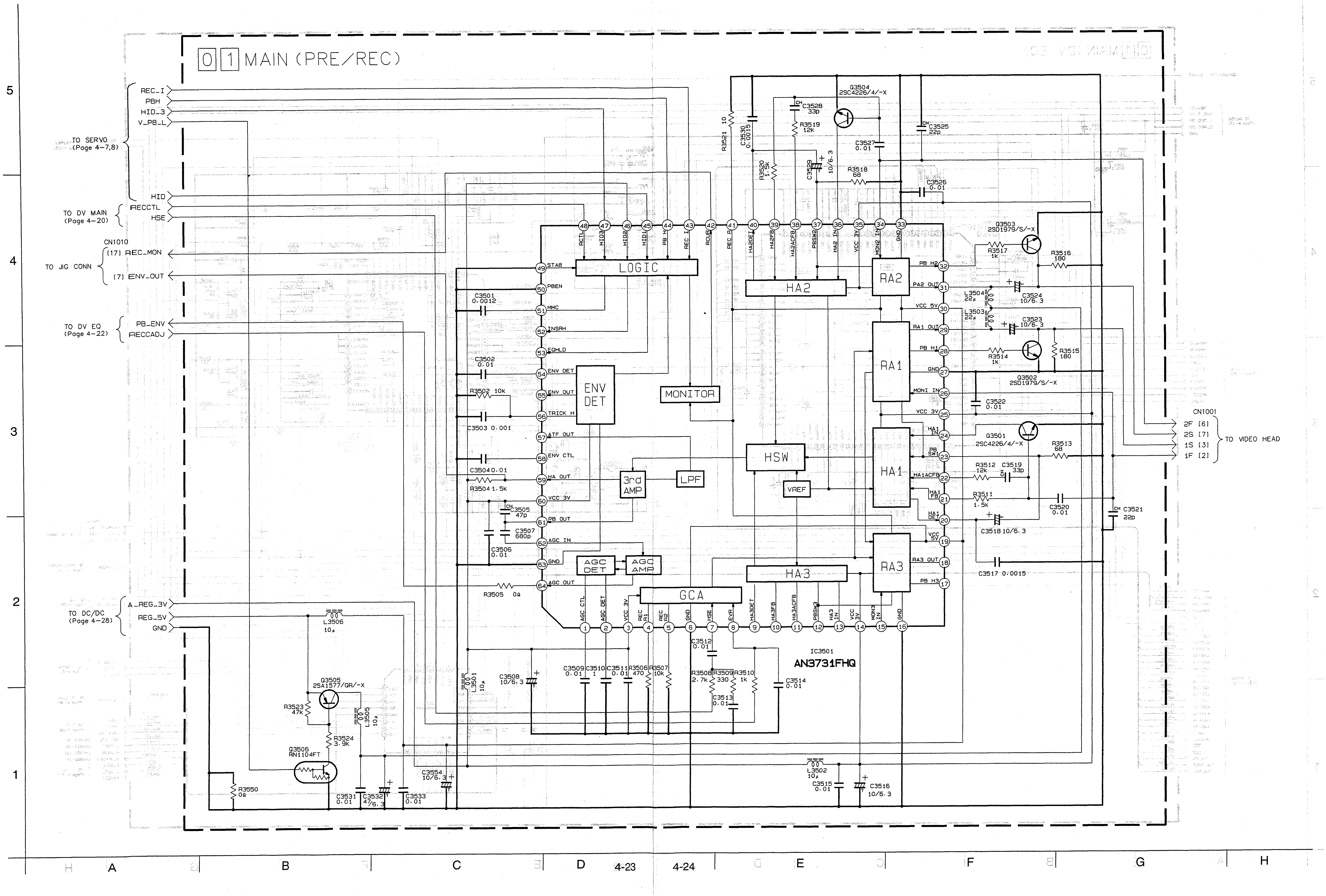


01 MAIN (DV MAIN)
5
4
3
2
1
A
B
C
D
E
F
G
H
CN1010
TO JIG CONN
[19] SBE
[18] FS_PLL
TO DC/DC (Page 4-28)
D_REG_3V
REG_2.2V
GND
IC3004 TK11216BMC
IC3007 TC7SL00FU
IC3005 SN74AHC1G04K
(OPEN) PBH
TO AUDIO AD/DA (Page 4-10)
DOLRCK
DOBCK
DOMCK
AIDAT
DODAT
TO Y/C (Page 4-26)
DYI0
DYI1
DYI2
DYI3
DCI0
DCI1
DCI2
DCI3
OUTH
OUTV
DYO0
DYO1
DYO2
DYO3
DCO0
DCO1
DCO2
DCO3
INH
INV
(CN1003-17) CLK27
IC3001
JCY0106-2
DECK_DSP
IC3101
PDI1394P11EB
1394PHY
IC3002
UPD4218165LFB50
16M_DRAM
J3101
TO SERVO, DV EQ, PRE/REC (Page 4-7,21,23)
PWMAUD
PWM405
VCOAUD
VCO81
RECCLK
SPA
PBCLK
PBDATA
RECCTL
HSE
AVCOC
TO SERVO (Page 4-7)
HID
TSR
FRP
PHY_PD
PHY_CNA
PHY_RST
TO SERVO (Page 4-7,8)
ADDT00
ADDT01
ADDT02
ADDT03
ADDT04
ADDT05
ADDT06
ADDT07
ADDT08
ADDT09
ADDT10
ADDT11
ADDT12
ADDT13
ADDT14
ADDT15
DV_RST
DALE
DRE
DWE
DRWSEL
DV_CS
DV_INT
DV_WAIT
3V

4.11 DV EQ SCHEMATIC DIAGRAM

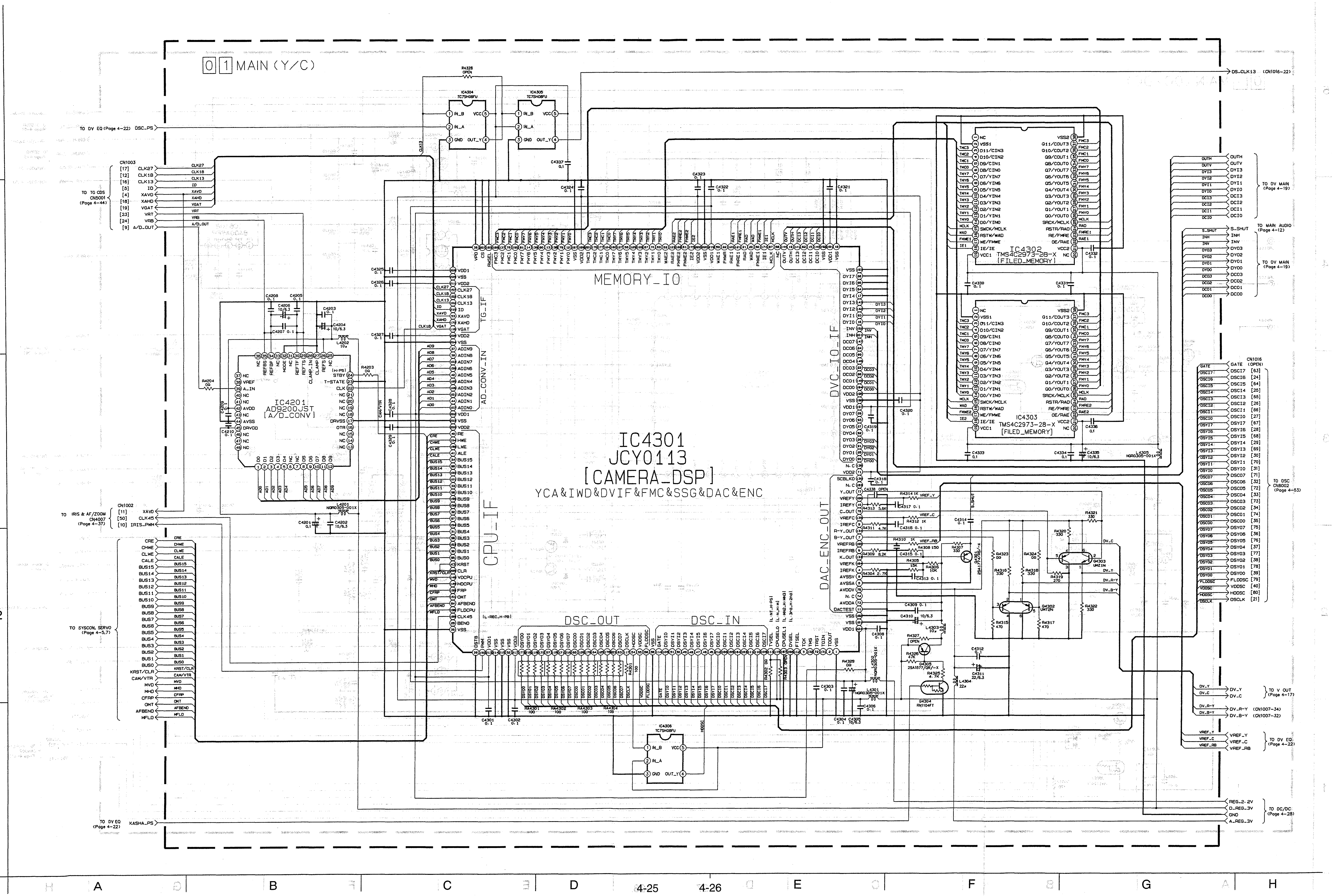

01 MAIN (DV EQ)
(CN1003-17) CLK27
REG_5V
REG_2.2V
A_REG_3V
D_REG_3V
GND
TO DC/DC (Page 4-28)
PWMAUD
PWM405
VCOAUD
VCO81
RECCLK
SPA
PBCLK
PBDATA
RECCTL
AVCOC
TO DV MAIN (Page 4-20)
ANA_PD
ANA_CLK
ANA_IO
ANA_CS
HID
PBH
ADDT00
ADDT01
ADDT02
ADDT03
ADDT04
ADDT05
ADDT06
ADDT07
ADDT08
ADDT09
ADDT10
ADDT11
ADDT12
ADDT13
ADDT14
ADDT15
DALE
DRWSEL
DRE
DWE
EQ_CS
EQ_TRST
EQ_RST
TO SERVO (Page 4-7,8)
IC3201 JCY0107-2 DVEQ
AUTO EQ
VITERBI
CPU IF
ATF
IC3301 JCY0108 DVANA
IC3303 TLC2940IPW
IC3401 MB88346PF
Q3301 2SA1577
D3302 DAP222
3V
PB_ENV
RECCADJ
TO PRE/REC (Page 4-23)
CN1010
MAIN_DC [6]
ATFI [8]
PB_VCO [16]
TO JIG CONN
AU_CMODE
TO AUDIO AD/DA (Page 4-10)
DSC_PS
KASHA_PS
TO Y/C (Page 4-25)
AFZ_DATA
AFZ_CLK
DAC_CS
TO SYSCON (Page 4-6)
SENS_EVR
TO ST SENS (Page 4-16)
VREF_Y
VREF_C
VREF_RB
TO Y/C (Page 4-26)
AGC_CTL (CN1003-10)
OFFSET (CN1003-25)
H_GAIN (CN1002-12)
H_OFFSET (CN1002-51)
Y_GCTL
C_GCTL
ASPECT
TO V OUT (Page 4-17)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.12 PRE/REC SCHEMATIC DIAGRAM

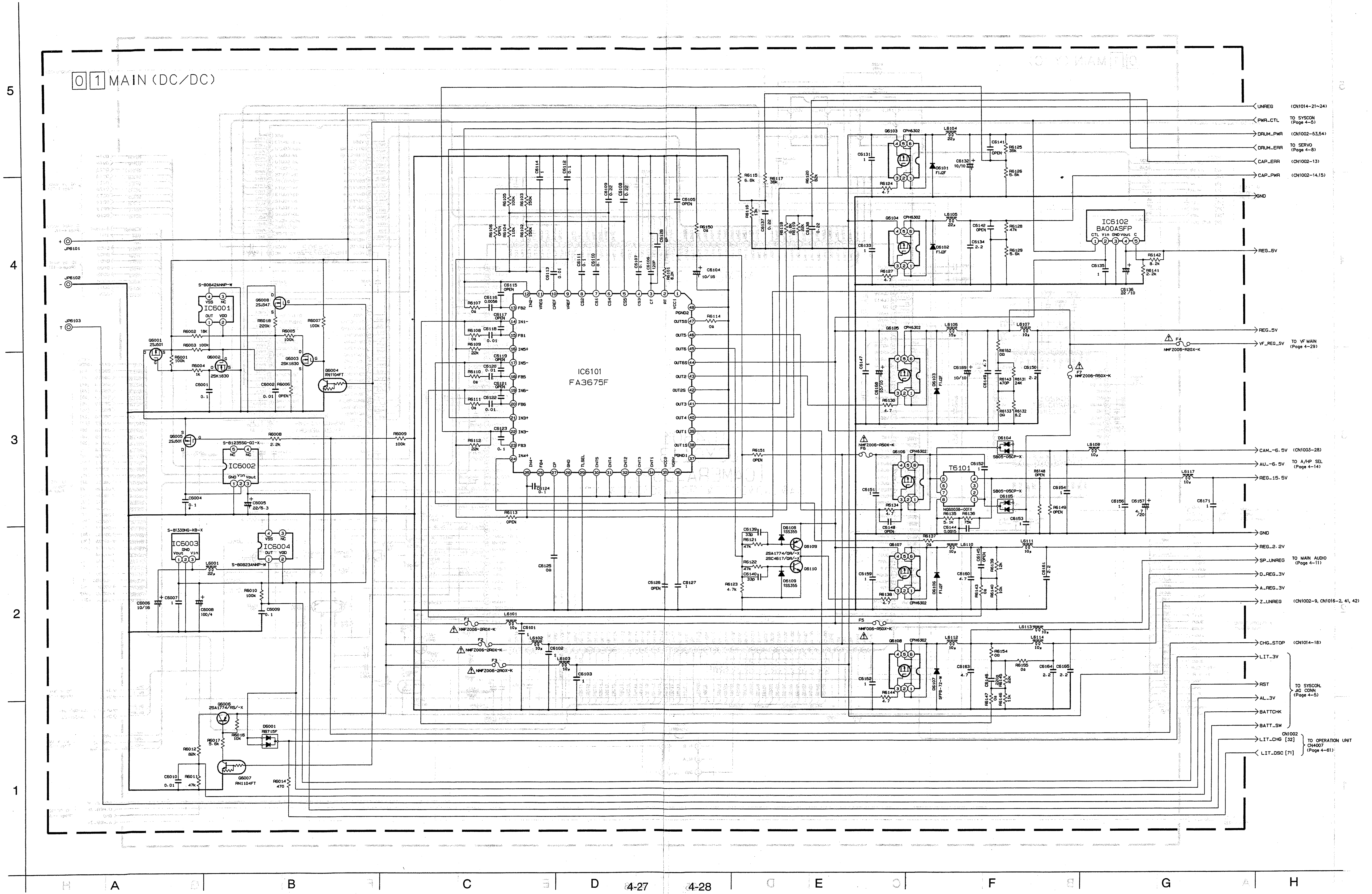


01 MAIN (PRE/REC)
TO SERVO (Page 4-7,8)
REC_I
PBH
HID_3
V_PB_L
HID
TO DV MAIN (Page 4-20)
RECCTL
HSE
CN1010
TO JIG CONN
[17] REC_MON
[7] ENV_OUT
TO DV EQ (Page 4-22)
PB_ENV
RECCADJ
TO DC/DC (Page 4-28)
A_REG_3V
REG_5V
GND
LOGIC
ENV DET
MONITOR
3rd AMP
LPF
AGC DET
AGC AMP
GCA
HA2
HSW
VREF
HA3
RA2
RA1
HA1
RA3
STAB
PBEN
MMC
INSRH
EQHLD
ENV DET
ENV OUT
TRICK H
ATF OUT
ENV CTL
HA OUT
VCC 3V
PB OUT
AGC IN
GND
AGC OUT
RCTL
HID3
HID2
HID1
PB H
REC I
RCLR
REC R
HA2DET
HA2FB
HA2ACFB
PBSW2
HA2 IN
VCC 3V
MON2 IN
GND
PB H2
PA2 OUT
VCC 5V
RA1 OUT
PB H1
GND
MONI IN
VCC 3V
HA1 IN
PB SW1
HA1ACFB
HA1 FB
HA1 DET
VCC 5V
RA3 OUT
PB H3
AGC CTL
AGC DET
VCC 3V
REC R1
REC R2
GND
HSE
EVR
HA3DET
HA3FB
HA3ACFB
PBSW3
HA3 IN
VCC 3V
MON3 IN
GND
IC3501
AN3731FHQ
Q3504 2SC4226/4/-X
C3528 33p
R3519 12k
C3525 22p
C3527 0.01
R3521 10
C3530 0.0015
R3520 1.5k
C3529 10/6.3
R3518 68
C3526 0.01
Q3503 2SD1979/S/-X
R3517 1k
R3516 180
C3524 10/6.3
L3504 22μ
L3503 22μ
C3523 10/6.3
R3514 1k
R3515 180
Q3502 2SD1979/S/-X
C3522 0.01
CN1001
2F [6]
2S [7]
1S [3]
1F [2]
TO VIDEO HEAD
Q3501 2SC4226/4/-X
R3513 68
R3512 12k
C3519 33p
R3511 1.5k
C3520 0.01
C3521 22p
C3518 10/6.3
C3517 0.0015
C3501 0.0012
C3502 0.01
R3502 10k
C3503 0.001
C3504 0.01
R3504 1.5k
C3505 47p
C3507 680p
C3506 0.01
R3505 0Ω
L3506 10μ
Q3505 2SA1577/QR/-X
R3523 47k
R3524 3.9k
L3505 10μ
Q3506 RN1104FT
R3550 0Ω
C3531 0.01
C3532 47/6.3
C3533 0.01
C3554 10/6.3
L3501 10μ
C3508 10/6.3
C3509 0.01
C3510 1
C3511 0.01
R3506 470
R3507 10k
C3512 0.01
R3508 2.7k
R3509 330
R3510 1k
C3513 0.01
C3514 0.01
L3502 10μ
C3515 0.01
C3516 10/6.3
5
4
3
2
1
A
B
C
D
E
F
G
H

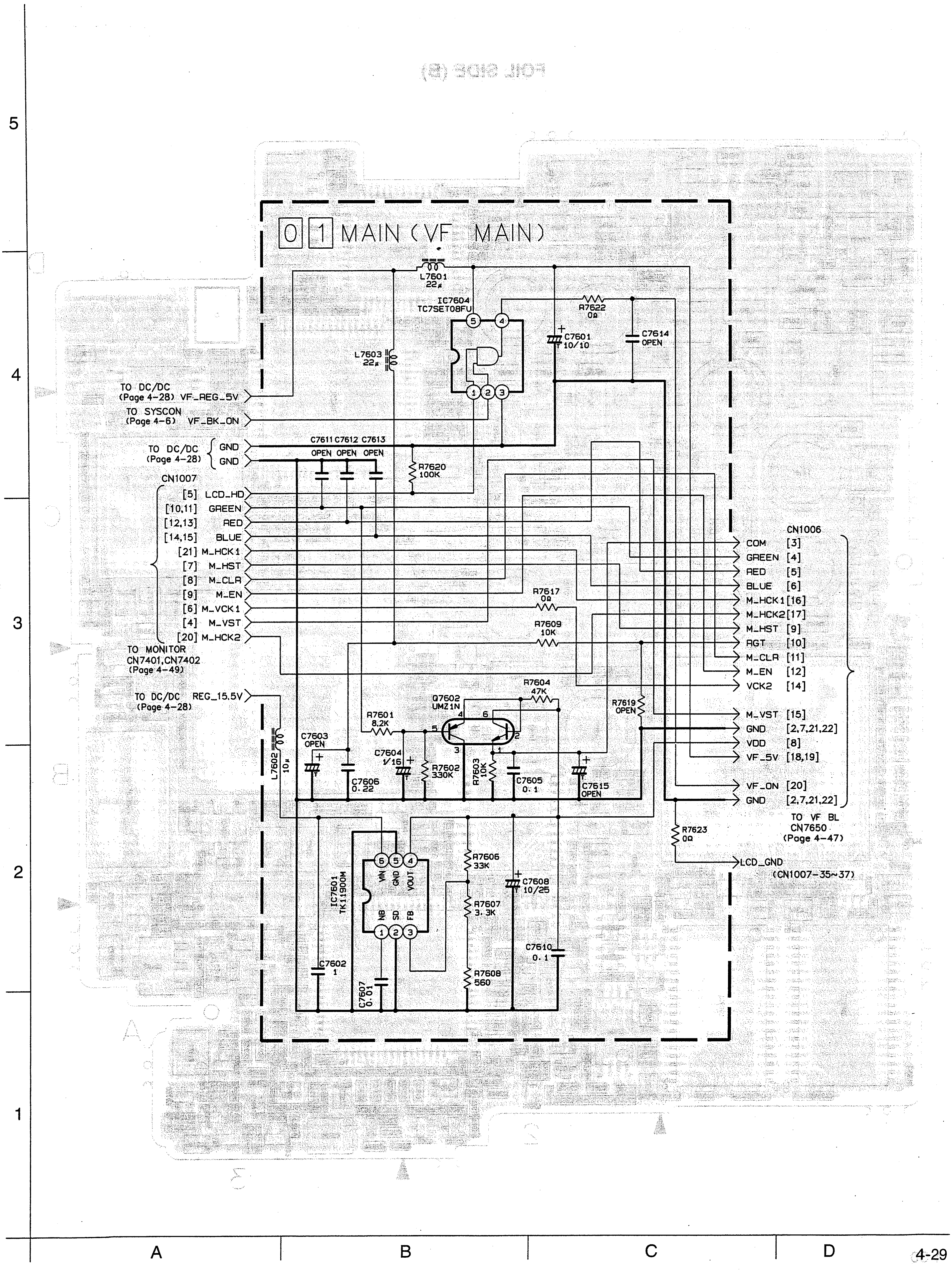
4.13 Y/C SCHEMATIC DIAGRAM


0 1 MAIN (Y/C)
IC4301
JCY0113
[CAMERA_DSP]
YCA&IWD&DVIF&FMC&SSG&DAC&ENC
MEMORY_IO
TG_IF
AD_CONV_IN
CPU_IF
DSC_OUT
DSC_IN
DVC_IO_IF
DAC_ENC_OUT
IC4201
AD9200JST
[A/D_CONV]
IC4302
TMS4C2973-28-X
[FILED_MEMORY]
IC4303
TMS4C2973-28-X
[FILED_MEMORY]
IC4304
TC7SH08FU
IC4305
TC7SH08FU
IC4306
TC7SH08FU
R4328 OPEN
CN1003
TO TG CDS CN5001 (Page 4-44)
CLK27
CLK18
CLK13
ID
XAVD
XAHD
VGAT
VRT
VRB
A/D_OUT
TO DV EQ (Page 4-22) DSC_PS
CN1002
TO IRIS & AF/ZOOM CN4007 (Page 4-37)
XAVD
CLK45
IRIS_PWM
TO SYSCON, SERVO (Page 4-5,7)
CRE
CHWE
CLWE
CALE
BUS15
BUS14
BUS13
BUS12
BUS11
BUS10
BUS9
BUS8
BUS7
BUS6
BUS5
BUS4
BUS3
BUS2
BUS1
BUS0
KRST/CLR
CAM/VTR
MVD
MHD
CFRP
OMT
AFBEND
MFLD
TO DV EQ (Page 4-22) KASHA_PS
DS_CLK13 (CN1016-22)
OUTH
OUTV
DYI3
DYI2
DYI1
DYI0
DCI3
DCI2
DCI1
DCI0
TO DV MAIN (Page 4-19)
S_SHUT
INH
INV
TO MAIN AUDIO (Page 4-12)
DYO3
DYO2
DYO1
DYO0
DCO3
DCO2
DCO1
DCO0
TO DV MAIN (Page 4-19)
CN1016
GATE (OPEN)
DSC17
DSC16
DSC15
DSC14
DSC13
DSC12
DSC11
DSC10
DSY17
DSY16
DSY15
DSY14
DSY13
DSY12
DSY11
DSY10
DSC07
DSC06
DSC05
DSC04
DSC03
DSC02
DSC01
DSC00
DSY07
DSY06
DSY05
DSY04
DSY03
DSY02
DSY01
DSY00
FLDOSC
VDOSC
HDOSC
DSCLK
TO DSC CN8002 (Page 4-53)
DV_Y
DV_C
TO V OUT (Page 4-17)
DV_R-Y (CN1007-34)
DV_B-Y (CN1007-32)
VREF_Y
VREF_C
VREF_RB
TO DV EQ (Page 4-22)
REG_2.2V
D_REG_3V
GND
A_REG_3V
TO DC/DC (Page 4-28)
Q4301 2SA1774/QR/-X
Q4302 UMT2N
Q4303 UMZ1N
Q4304 RN1104FT
Q4305 2SA1577/QR/-X
L4201 NQR0305-001X
L4202
L4301 NQR0305-001X
L4303 10μ
L4304 22μ
L4305 NQR0305-001X
5
4
3
2
1
A
B
C
D
E
F
G
H

4.14 DC/DC SCHEMATIC DIAGRAM

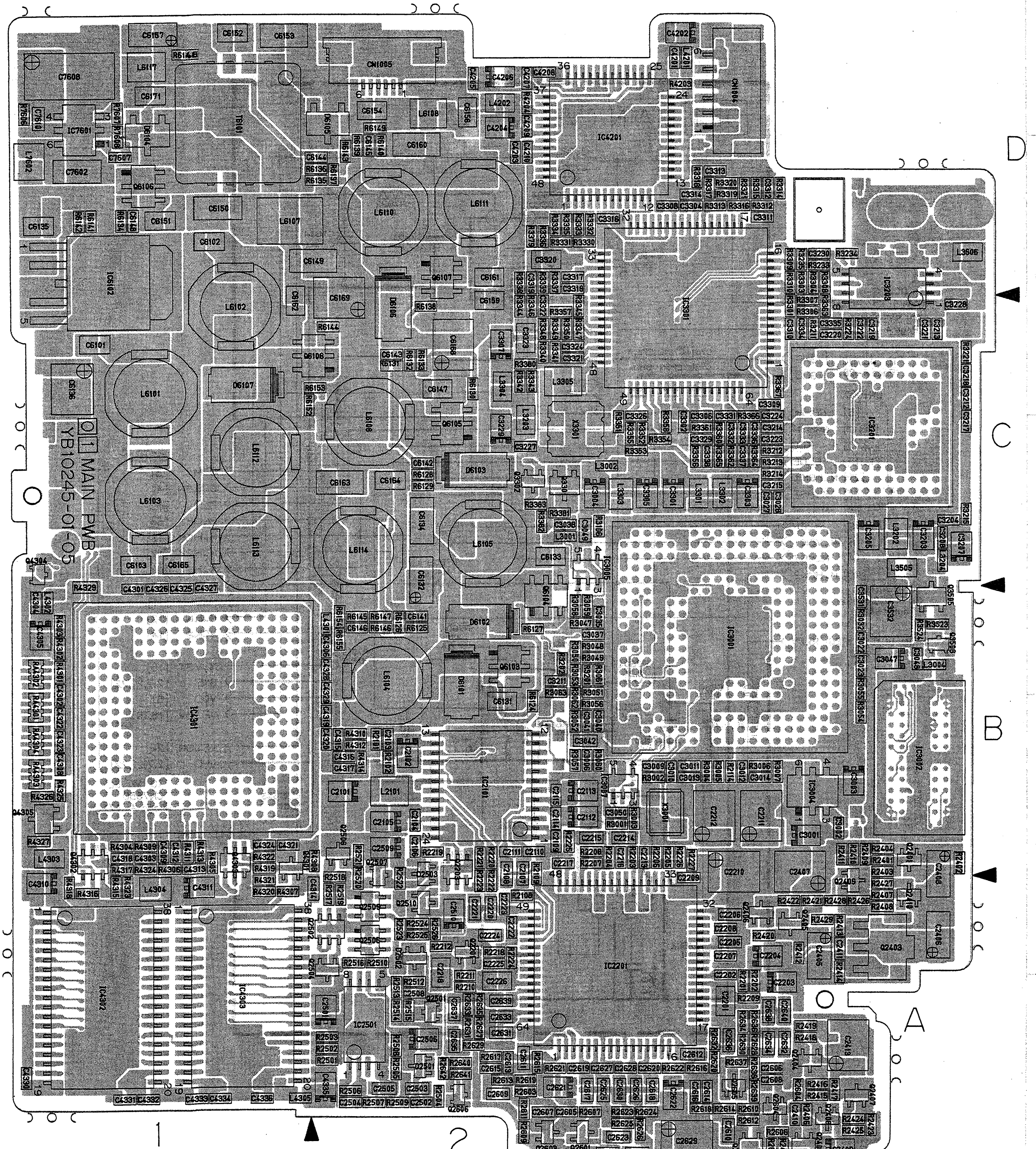

01 MAIN (DC/DC)
IC6101 FA3675F
IC6102 BA00ASFP
IC6001 S-80842ANNP-W
IC6002 S-81235SG-QI-X
IC6003 S-81330HG-KB-X
IC6004 S-80823ANNP-W
T6101
JP6101
JP6102
JP6103
UNREG (CN1014-21~24)
PWR_CTL TO SYSCON (Page 4-5)
DRUM_PWR (CN1002-53,54)
DRUM_ERR TO SERVO (Page 4-8)
CAP_ERR (CN1002-13)
CAP_PWR (CN1002-14,15)
GND
REG_6V
REG_5V
VF_REG_5V TO VF MAIN (Page 4-29)
CAM_-6.5V (CN1003-28)
AU_-6.5V TO A/HP SEL (Page 4-14)
REG_15.5V
GND
REG_2.2V
SP_UNREG TO MAIN AUDIO (Page 4-11)
D_REG_3V
A_REG_3V
Z_UNREG (CN1002-9, CN1016-2, 41, 42)
CHG_STOP (CN1014-18)
LIT_3V
RST TO SYSCON, JIG CONN (Page 4-5)
AL_3V
BATTCHK
BATT_SW
CN1002
LIT_CHG [32] TO OPERATION UNIT CN4007 (Page 4-61)
LIT_DSC [71]
F1 NMFZ006-2R0X-K
F2 NMFZ006-2R0X-K
F3 NMFZ006-2R0X-K
F4 NMFZ006-R20X-K
F5 NMFZ006-R50X-K
F6 NMFZ006-R50X-K
F7 NMFZ006-R50X-K
1
2
3
4
5
A
B
C
D
E
F
G
H

4.15 VF MAIN SCHEMATIC DIAGRAM


0 1 MAIN (VF MAIN)
L7601
22µ
IC7604
TC7SET08FU
R7622
0Ω
C7601
10/10
C7614
OPEN
L7603
22µ
TO DC/DC
(Page 4-28) VF_REG_5V
TO SYSCON
(Page 4-6) VF_BK_ON
TO DC/DC
(Page 4-28)
GND
GND
C7611 C7612 C7613
OPEN OPEN OPEN
R7620
100K
CN1007
[5] LCD_HD
[10,11] GREEN
[12,13] RED
[14,15] BLUE
[21] M_HCK1
[7] M_HST
[8] M_CLR
[9] M_EN
[6] M_VCK1
[4] M_VST
[20] M_HCK2
TO MONITOR
CN7401,CN7402
(Page 4-49)
R7617
0Ω
R7609
10K
R7604
47K
TO DC/DC REG_15.5V
(Page 4-28)
Q7602
UMZ1N
R7601
8.2K
R7619
OPEN
C7603
OPEN
L7602
10µ
C7604
1/16
R7602
330K
R7603
10K
C7605
0.1
C7615
OPEN
C7606
0.22
CN1006
COM [3]
GREEN [4]
RED [5]
BLUE [6]
M_HCK1 [16]
M_HCK2 [17]
M_HST [9]
RGT [10]
M_CLR [11]
M_EN [12]
VCK2 [14]
M_VST [15]
GND [2,7,21,22]
VDD [8]
VF_5V [18,19]
VF_ON [20]
GND [2,7,21,22]
TO VF BL
CN7650
(Page 4-47)
R7623
0Ω
LCD_GND
(CN1007-35~37)
IC7601
TK11900M
VIN
GND
VOUT
NB
SD
FB
R7606
33K
C7608
10/25
R7607
3.3K
C7610
0.1
C7602
1
C7607
0.01
R7608
560
5
4
3
2
1
A
B
C
D

.16 MAIN CIRCUIT BOARD

FOIL SIDE (B)

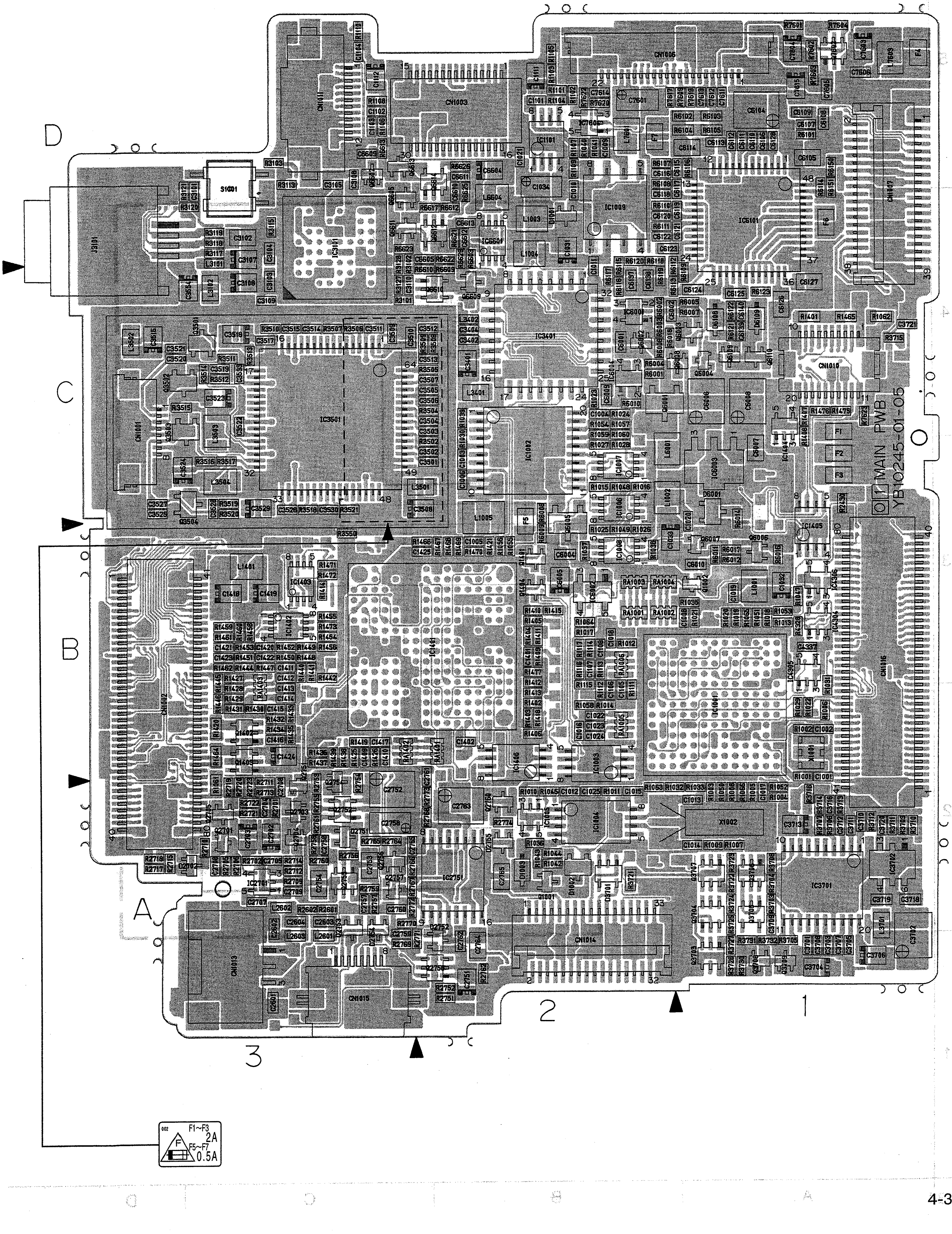

D
C
B
A
1
2
3
01 MAIN PWB
YB10245-01-05
CN1005
CN1004
IC4201
IC7601
T6101
IC6102
IC3301
IC3201
IC3001
IC3002
X3301
IC4301
IC2101
IC2201
IC4302
IC4303
IC2501

COMPONENT PARTS LOCATION GUIDE (MAIN)

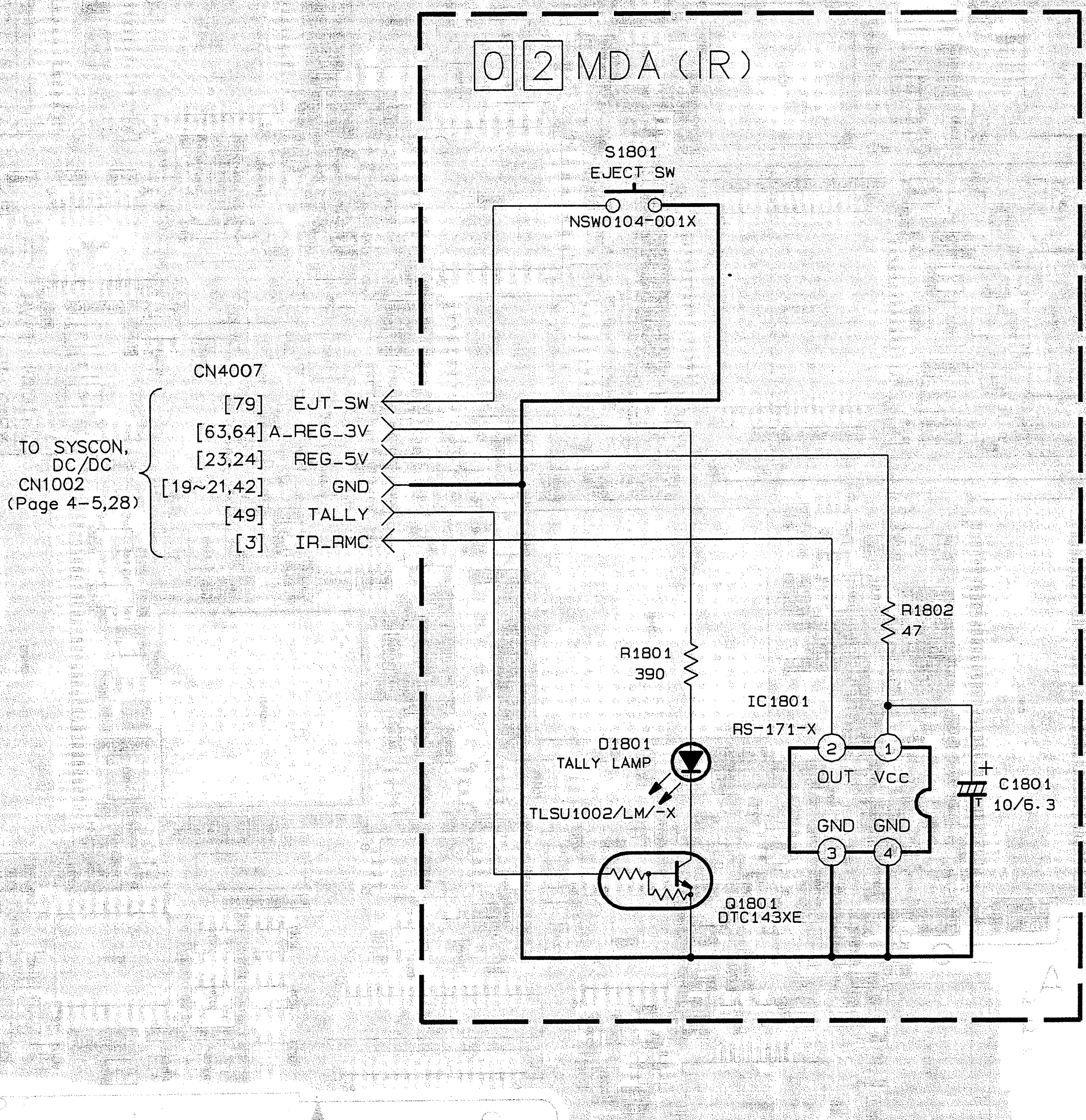
REF.No.	LOCATION		
CAPACITOR			
C1001	A	C	1B
C1002	A	C	1B
C1003	A	C	2C
C1004	A	C	2C
C1005	A	C	2B
C1006	A	C	2C
C1008	A	C	1B
C1009	A	C	2D
C1010	A	C	2D
C1011	A	C	2C
C1012	A	C	2A
C1013	A	C	1A
C1014	A	C	1A
C1015	A	C	2A
C1016	A	C	2B
C1017	A	C	1A
C1018	A	C	2B
C1019	A	C	1B
C1020	A	C	1C
C1021	A	C	2D
C1022	A	C	2B
C1023	A	C	2B
C1024	A	C	2B
C1025	A	C	2A
C1031	A	C	2D
C1032	A	C	1B
C1033	A	C	2B
C1034	A	C	2D
C1101	A	C	2D
C1102	A	C	3D
C1103	A	C	3D
C1104	A	C	3D
C1105	A	C	2B
C1106	A	C	2B
C1107	A	C	2B
C1108	A	C	2B
C1111	A	C	2D
C1112	A	C	3D
C1401	A	C	2B
C1402	A	C	2B
C1409	A	C	3B
C1410	A	C	3B
C1411	A	C	3B
C1412	A	C	3B
C1413	A	C	3B
C1414	A	C	3B
C1415	A	C	3B
C1416	A	C	3B
C1417	A	C	3B
C1418	A	C	3B
C1419	A	C	3B
C1420	A	C	3B
C1421	A	C	3B
C1422	A	C	3B
C1423	A	C	3B
C1424	A	C	3B
C1425	A	C	2B
C2101	B	C	2B
C2102	B	C	2B
C2103	B	C	2B
C2104	B	C	2B
C2105	B	C	2B
C2106	B	C	2B
C2107	B	C	2B
C2108	B	C	2B
C2109	B	C	2B
C2110	B	C	2B
C2111	B	C	2B
C2112	B	C	2B
C2113	B	C	2B
C2114	B	C	2B
C2115	B	C	2B
C2201	B	C	3A
C2202	B	C	3A
C2203	B	C	3A
C2204	B	C	3A
C2205	B	C	3A
C2206	B	C	3A
C2207	B	C	3A
C2208	B	C	3A
C2209	B	C	3A
C2210	B	C	3B
C2211	B	C	3B
C2212	B	C	3B
C2213	B	C	3B
C2214	B	C	3B
C2215	B	C	2B
C2216	B	C	3B
C2217	B	C	2B
C2218	B	C	2A
C2220	B	C	2A
C2221	B	C	2A
C2222	B	C	2A
C2223	B	C	2A
C2224	B	C	2A
C2225	B	C	2A
C2226	B	C	2A
C2405	B	C	3A
C2406	B	C	3A
C2407	B	C	3B
C2408	B	C	3B
C2409	B	C	3A
C2410	B	C	3A
C2411	B	C	3A
C2413	B	C	3A
C2501	B	C	2A
C2502	B	C	2A
C2503	B	C	2A
C2504	B	C	2A
C2505	B	C	2A
C2506	B	C	2A
C2508	B	C	2A
C2509	B	C	2B
C2510	B	C	2A
C2601	A	C	3A
C2602	A	C	3A
C2603	A	C	3A
C2604	A	C	3A
C2605	B	C	2A
C2606	B	C	3A
C2607	B	C	2A
C2608	B	C	3A
C2609	B	C	2A
C2610	B	C	3A
C2611	B	C	2A
C2612	B	C	3A
C2613	B	C	2A
C2614	B	C	3A
C2615	B	C	2A
C2616	B	C	3A
C2617	B	C	2A
C2618	B	C	3A
C2619	B	C	2A
C2620	B	C	3A
C2621	B	C	2A
C2622	B	C	3A
C2623	B	C	3A
C2624	B	C	3A
C2625	B	C	3A
C2626	B	C	3A
C2627	B	C	2A
C2628	B	C	3A
C2629	B	C	3A
C2630	B	C	3A
C2631	B	C	2A
C2632	B	C	3A
C2633	B	C	2A
C2634	B	C	3A
C2635	B	C	2A
C2636	B	C	3A
C2637	B	C	2A
C2638	B	C	3A
C2639	B	C	2A
C2640	B	C	3A
C2702	A	C	3A
C2703	A	C	3A
C2704	A	C	3A
C2705	A	C	3A
C2706	A	C	3A
C2707	A	C	3A
C2708	A	C	3A
C2709	A	C	3A
C2751	A	C	2A
C2752	A	C	3A
C2753	A	C	3A
C2754	A	C	3A
C2755	A	C	3A
C2756	A	C	3A
C2757	A	C	3A
C2758	A	C	3A
C2759	A	C	3A
C2760	A	C	3A
C2761	A	C	2B
C2762	A	C	2A
C2763	A	C	2A
C2764	A	C	2A
C2765	A	C	2A
C3001	B	C	3B
C3002	B	C	3B
C3003	B	C	3B
C3004	B	C	2C
C3006	B	C	2B
C3009	B	C	3B
C3010	B	C	3B
C3011	B	C	3B
C3012	B	C	3B
C3013	B	C	3B
C3014	B	C	3B
C3022	B	C	3B
C3023	B	C	3B
C3027	B	C	3C
C3028	B	C	3C
C3035	B	C	2B
C3037	B	C	2B
C3038	B	C	2C
C3040	B	C	2B
C3041	B	C	2B
C3042	B	C	2B
C3047	B	C	3B
C3048	B	C	3B
C3049	B	C	2C
C3050	B	C	3B
C3101	A	C	3D
C3102	A	C	3D
C3103	A	C	3C
C3104	A	C	3D
C3105	A	C	3D
C3106	A	C	3C
C3107	A	C	3D
C3108	A	C	3D
C3109	A	C	3C
C3110	A	C	3C
C3203	B	C	3C
C3204	B	C	3C
C3205	B	C	3C
C3207	B	C	3C
C3208	B	C	3C
C3211	B	C	2B
C3212	B	C	3C
C3213	B	C	3C
C3214	B	C	3C
C3215	B	C	3C
C3217	B	C	3C
C3218	B	C	3C
C3219	B	C	3C
C3220	B	C	3C
C3221	B	C	3C
C3222	B	C	3C
C3223	B	C	3C
C3224	B	C	3C
C3227	B	C	2C
C3228	B	C	3C
C3229	B	C	2C
C3230	B	C	3D
C3301	B	C	3C
C3302	B	C	3C
C3303	B	C	3C
C3304	B	C	3D
C3305	B	C	3C
C3306	B	C	3C
C3307	B	C	2C
C3308	B	C	3D
C3309	B	C	3C
C3310	B	C	3C
C3311	B	C	3D
C3312	B	C	3D
C3313	B	C	3D
C3314	B	C	3D
C3316	B	C	3D
C3317	B	C	2D
C3318	B	C	2D
C3319	B	C	2D
C3320	B	C	2D
C3321	B	C	2C
C3322	B	C	2C
C3323	B	C	2C
C3324	B	C	2C
C3326	B	C	3C
C3329	B	C	3C
C3331	B	C	3C
C3332	B	C	3C
C3333	B	C	3C
C3334	B	C	3C
C3335	B	C	3C
C3336	B	C	3C
C3337	B	C	3C
C3338	B	C	3C
C3401	A	C	2C
C3402	A	C	2C
C3404	A	C	2C
C3501	A	C	2C
C3502	A	C	2C
C3503	A	C	2C
C3504	A	C	2C
C3505	A	C	2C
C3506	A	C	2C
C3507	A	C	2C
C3508	A	C	2C
C3509	A	C	3C
C3510	A	C	3C
C3511	A	C	3C
C3512	A	C	2C
C3513	A	C	2C
C3514	A	C	3C
C3515	A	C	3C
C3516	A	C	3C
C3517	A	C	3C
C3518	A	C	3C
C3519	A	C	3C
C3520	A	C	3C
C3521	A	C	3C
C3522	A	C	3C
C3523	A	C	3C
C3524	A	C	3C
C3525	A	C	3C
C3526	A	C	3C
C3527	A	C	3C
C3528	A	C	3C
C3529	A	C	3C
C3530	A	C	3C
C3531	B	C	3B
C3532	B	C	3B
C3533	A	C	3C
C3554	A	C	3C
C3701	A	C	1A
C3702	A	C	1A
C3703	A	C	1A
C3704	A	C	1A
C3705	A	C	1A
C3706	A	C	1A
C3707	A	C	1A
C3708	A	C	1A
C3709	A	C	1A
C3710	A	C	1A
C3711	A	C	1A
C3712	A	C	1A
C3713	A	C	1A
C3716	A	C	1A
C3718	A	C	1A
C3719	A	C	1A
C3720	A	C	1A
C3721	A	C	1C
C4201	B	C	3D
C4202	B	C	3D
C4203	B	C	2D
C4204	B	C	2D
C4205	B	C	2D
C4206	B	C	2D
C4207	B	C	2D
C4208	B	C	2D
C4209	B	C	2D
C4210	B	C	2D
C4301	B	C	1C
C4302	B	C	1B
C4303	B	C	1B
C4304	B	C	1B
C4305	B	C	1B
C4306	B	C	2B
C4308	B	C	1B
C4309	B	C	1B
C4310	B	C	1A
C4311	B	C	1A
C4312	B	C	1B
C4313	B	C	1B
C4314	B	C	2A
C4315	B	C	2B
C4316	B	C	2B
C4317	B	C	2B
C4318	B	C	1B
C4319	B	C	2B
C4320	B	C	2B
C4321	B	C	1B
C4322	B	C	1B
C4323	B	C	1B
C4324	B	C	1B
C4325	B	C	1C
C4326	B	C	1C
C4327	B	C	1C
C4328	B	C	2B
C4329	B	C	2B
C4330	B	C	1A
C4331	B	C	1A
C4332	B	C	1A
C4333	B	C	1A
C4334	B	C	1A
C4335	B	C	2A
C4336	B	C	1A
C4337	A	C	1B
C6001	A	C	2C
C6002	A	C	2C
C6004	A	C	2B
C6005	A	C	2B
C6006	A	C	1C
C6007	A	C	1C
C6008	A	C	1C
C6009	A	C	2C
C6010	A	C	1B
C6101	B	C	1C
C6102	B	C	1D
C6103	B	C	1C
C6104	A	C	1D
C6105	A	C	1D
C6106	A	C	1D
C6107	A	C	1D
C6108	A	C	1D
C6109	A	C	1D
C6110	A	C	1D
C6111	A	C	1D
C6112	A	C	1D
C6113	A	C	1D
C6114	A	C	1D
C6115	A	C	2D
C6116	A	C	2D
C6117	A	C	2D
C6118	A	C	2D
C6119	A	C	2D
C6120	A	C	2D
C6121	A	C	2D
C6122	A	C	2D
C6123	A	C	2D
C6124	A	C	1C
C6125	A	C	1C
C6126	A	C	1C
C6127	A	C	1C
C6128	A	C	1D
C6131	B	C	2B
C6132	B	C	2C
C6133	B	C	2C
C6134	B	C	2C
C6135	B	C	1D
C6136	B	C	1C
C6137	A	C	2C
C6138	A	C	2C
C6139	A	C	1C
C6140	A	C	1C
C6141	B	C	2B
C6142	B	C	2C
C6143	B	C	2C
C6144	B	C	2D
C6145	B	C	2D
C6146	B	C	2B
C6147	B	C	2C
C6148	B	C	1D
C6149	B	C	2D
C6150	B	C	1D
C6151	B	C	1D
C6152	B	C	1D
C6153	B	C	1D
C6154	B	C	2D
C6156	B	C	2D
C6157	B	C	1D
C6159	B	C	2C
C6160	B	C	2D
C6161	B	C	2D
C6162	B	C	1C
C6163	B	C	2C
C6164	B	C	2C
C6165	B	C	1C
C6168	B	C	2C
C6169	B	C	2D
C6171	B	C	1D
C6604	A	C	2D
C6605	A	C	2D
C6609	A	C	3D
C6610	A	C	2D
C6611	A	C	2D
C6612	A	C	2D
C6613	A	C	2D
C7601	A	C	2D
C7602	B	C	1D
C7603	A	C	1D
C7604	A	C	1D
C7605	A	C	1D
C7606	A	C	1D
C7607	B	C	1D
C7608	B	C	1D
C7610	B	C	1D
C7611	A	C	1D
C7612	A	C	1D
C7613	A	C	1D
C7614	A	C	2D
C7615	A	C	1D
CONNECTOR			
CN1001	A	C	3C
CN1002	A	C	3B
CN1003	A	C	2D
CN1004	B	C	3D
CN1005	B	C	2D
CN1006	A	C	1D
CN1007	A	C	1D
CN1010	A	C	1C
CN1011	A	C	3D
CN1013	A	C	3A
CN1014	A	C	2A
CN1015	A	C	3A
CN1016	A	C	1A
DIODE			
D1001	A	C	2D
D1002	A	C	2A
D1003	A	C	2A
D2501	B	C	2A
D2502	B	C	2A
D2503	B	C	2B
D2702	A	C	3A
D2751	A	C	3A
D2752	A	C	2A
D2753	A	C	3A
D2754	A	C	3A
D2755	A	C	2A
D3701	A	C	2A
D6001	A	C	1C
D6101	B	C	2B
D6102	B	C	2B
D6103	B	C	2C
D6104	B	C	1D
D6105	B	C	2D
D6106	B	C	2C
D6107	B	C	1C
D6108	A	C	1C
D6109	A	C	1C
IC			
IC1001	A	C	1B
IC1002	A	C	2C
IC1003	A	C	2B
IC1004	A	C	2A
IC1005	A	C	2A
IC1006	A	C	2C
IC1007	A	C	2C
IC1008	A	C	2B
IC1009	A	C	2D
IC1101	A	C	2D
IC1401	A	C	2B
IC1402	A	C	3B
IC1403	A	C	3B
IC1404	A	C	1C
IC1405	A	C	1B
IC1406	A	C	2B
IC2101	B	C	2B
IC2201	B	C	3A
IC2501	B	C	2A
IC2701	A	C	3A
IC2751	A	C	2A
IC3001	B	C	3B
IC3002	B	C	3B
IC3004	B	C	3B
IC3005	B	C	2C
IC3007	B	C	3B
IC3101	A	C	3D
IC3201	B	C	3C
IC3203	B	C	3D
IC3301	B	C	3C
IC3401	A	C	2C
IC3501	A	C	3C
IC3701	A	C	1A
IC3702	A	C	1A
IC4201	B	C	3D
IC4301	B	C	1B
IC4302	B	C	1A
IC4303	B	C	1A
IC4304	A	C	1B
IC4305	A	C	1B
IC4306	A	C	1B
IC6001	A	C	2C
IC6002	A	C	2B
IC6003	A	C	1C
IC6004	A	C	2C
IC6101	A	C	1D
IC6102	B	C	1D
IC6601	A	C	2D
IC7601	B	C	1D
IC7604	A	C	2D
COIL			
L1001	A	C	1B
L1002	A	C	2C
L1003	A	C	2D
L1004	A	C	2D
L1005	A	C	2C
L1401	A	C	3B
L2101	B	C	2B
L2601	A	C	3A
L2602	A	C	3A
L2603	A	C	3A
L3001	B	C	2C
L3002	B	C	3C
L3004	B	C	3B
L3101	A	C	3D
L3102	A	C	3C
L3202	B	C	3C
L3203	B	C	2C
L3204	B	C	3C
L3301	B	C	3C
L3302	B	C	3C
L3303	B	C	3C
L3304	B	C	2C
L3305	B	C	2C
L3401	A	C	2C
L3402	A	C	2C
L3501	A	C	2C
L3502	A	C	3C
L3503	A	C	3C
L3504	A	C	3C
L3505	B	C	3C
L3506	B	C	3D
L3701	A	C	1A
L4201	B	C	3D
L4202	B	C	2D
L4301	B	C	2B
L4302	B	C	1B
L4303	B	C	1B
L4304	B	C	1A
L4305	B	C	1A
L6001	A	C	2C
L6101	B	C	1C
L6102	B	C	1C
L6103	B	C	1C
L6104	B	C	2B
L6105	B	C	2C
L6106	B	C	2C
L6107	B	C	1D
L6108	B	C	2D
L6110	B	C	2D
L6111	B	C	2D
L6112	B	C	1C
L6113	B	C	1C
L6114	B	C	2C
L6117	B	C	1D
L6604	A	C	2D
L7601	A	C	2D
L7602	B	C	1D
L7603	A	C	1D
TRANSISTOR			
Q1001	A	C	2A
Q1002	A	C	1B
Q1401	A	C	2B
Q1402	A	C	3B
Q1403	A	C	3B
Q1404	A	C	2B
Q2201	B	C	2A
Q2203	B	C	2B
Q2401	B	C	3B
Q2402	B	C	3A
Q2403	B	C	3A
Q2404	B	C	3A
Q2405	B	C	3A
Q2406	B	C	3A
Q2407	B	C	3A
Q2408	B	C	3A
Q2409	B	C	3A
Q2410	B	C	3A
Q2501	B	C	2A
Q2502	B	C	2A
Q2504	B	C	2A
Q2505	B	C	2A
Q2506	B	C	2B
Q2507	B	C	2B
Q2509	B	C	2A
Q2510	B	C	2A
Q2601	B	C	2A
Q2602	B	C	3A
Q2603	B	C	2A
Q2604	B	C	3A
Q2605	B	C	3A
Q2606	B	C	2A
Q2701	A	C	3A
Q2703	A	C	3A
Q2704	A	C	3A
Q2705	A	C	3A
Q2751	A	C	3A
Q2752	A	C	3A
Q2754	A	C	3A
Q2755	A	C	3A
Q2756	A	C	3A
Q2757	A	C	3A
Q2758	A	C	2A
Q2760	A	C	2A
Q3301	B	C	2C
Q3302	B	C	2C
Q3501	A	C	3C
Q3502	A	C	3C
Q3503	A	C	3C
Q3504	A	C	3C
Q3505	B	C	3B
Q3506	B	C	3B
Q3703	A	C	1A
Q3704	A	C	1A
Q3705	A	C	1A
Q3706	A	C	1A
Q3707	A	C	1A
Q3708	A	C	1A
Q3709	A	C	1A
Q4301	B	C	1B
Q4302	B	C	1B
Q4303	B	C	1B
Q4304	B	C	1C
Q4305	B	C	1B
Q6001	A	C	2C
Q6002	A	C	2C
Q6003	A	C	1C
Q6004	A	C	1C
Q6005	A	C	2B

REF.No.	LOCATION		
Q6103	B	C	2B
Q6104	B	C	2B
Q6105	B	C	2C
Q6106	B	C	1D
Q6107	B	C	2D
Q6108	B	C	2C
Q6109	A	C	1C
Q6110	A	C	1C
Q6605	A	C	3D
Q6607	A	C	3D
Q6609	A	C	2C
Q6610	A	C	2C
Q6611	A	C	3D
Q6612	A	C	2D
Q6613	A	C	3D
Q6614	A	C	2D
Q7602	A	C	1D
RESISTOR			
R1001	A	C	1B
R1002	A	C	1B
R1003	A	C	1A
R1004	A	C	1A
R1005	A	C	1A
R1006	A	C	1B
R1007	A	C	1A
R1008	A	C	1A
R1009	A	C	1A
R1010	A	C	2A
R1011	A	C	2A
R1012	A	C	2B
R1013	A	C	1B
R1014	A	C	2B
R1015	A	C	2C
R1016	A	C	2C
R1017	A	C	2B
R1018	A	C	1B
R1019	A	C	1B
R1020	A	C	1B
R1021	A	C	1B
R1022	A	C	1B
R1023	A	C	2C
R1024	A	C	2C
R1025	A	C	2B
R1026	A	C	2B
R1027	A	C	2C
R1028	A	C	2C
R1029	A	C	1B
R1030	A	C	2C
R1031	A	C	1B
R1032	A	C	2A
R1033	A	C	1A
R1035	A	C	1B
R1036	A	C	2A
R1037	A	C	2B
R1038	A	C	2B
R1039	A	C	2C
R1040	A	C	2D
R1041	A	C	2D
R1042	A	C	2A
R1043	A	C	2A
R1044	A	C	2A
R1045	A	C	2A
R1047	A	C	1B
R1048	A	C	2C
R1049	A	C	2B
R1050	A	C	1A
R1051	A	C	1B
R1052	A	C	1A
R1053	A	C	1B
R1054	A	C	2C
R1055	A	C	2B
R1056	A	C	2B
R1057	A	C	2C
R1058	A	C	2B
R1059	A	C	2C
R1060	A	C	2C
R1061	A	C	3A
R1062	A	C	1C
R1063	A	C	2A
R1064	A	C	2B
R1065	A	C	1B
R1066	A	C	1A
R1101	A	C	2D
R1102	A	C	2D
R1103	A	C	2D
R1104	A	C	2D
R1105	A	C	2D
R1106	A	C	3D
R1107	A	C	2D
R1108	A	C	3D
R1109	A	C	2D
R1110	A	C	3D
R1111	A	C	2B
R1112	A	C	2B
R1113	A	C	2B
R1114	A	C	2B
R1115	A	C	2B
R1116	A	C	2B
R1117	A	C	2B
R1401	A	C	1C
R1402	A	C	2B
R1403	A	C	2B
R1404	A	C	2B
R1405	A	C	2B
R1406	A	C	2B
R1407	A	C	1C
R1408	A	C	1C
R1409	A	C	2B
R1410	A	C	2B
R1411	A	C	2B
R1412	A	C	2B
R1413	A	C	2B
R1414	A	C	3B
R1415	A	C	2B
R1418	A	C	2B
R1419	A	C	3B
R1420	A	C	3B
R1421	A	C	2B
R1425	A	C	3B
R1426	A	C	3B
R1427	A	C	3B
R1428	A	C	3B
R1429	A	C	3B
R1430	A	C	3B
R1431	A	C	3B
R1432	A	C	3B
R1433	A	C	3B
R1434	A	C	3B
R1435	A	C	3B
R1436	A	C	3B
R1437	A	C	3B
R1438	A	C	3B
R1439	A	C	3B
R1440	A	C	3B
R1441	A	C	3B
R1442	A	C	3B
R1444	A	C	3B
R1445	A	C	3B
R1446	A	C	3B
R1447	A	C	3B
R1448	A	C	3B
R1449	A	C	3B
R1450	A	C	3B
R1451	A	C	3B
R1452	A	C	3B
R1453	A	C	3B
R1454	A	C	3B
R1455	A	C	3B
R1456	A	C	3B
R1458	A	C	3B
R1459	A	C	3B
R1460	A	C	3B
R1461	A	C	3B
R1462	A	C	3B
R1464	A	C	3B
R1465	A	C	1C
R1466	A	C	2B
R1467	A	C	2B
R1468	A	C	2B
R1469	A	C	2B
R1470	A	C	2B
R1471	A	C	3B
R1472	A	C	3B
R1473	A	C	3B
R1475	A	C	1C
R1476	A	C	1C
R1477	A	C	2B
R2101	B	C	2B
R2102	B	C	2B
R2108	B	C	2A
R2109	B	C	2B
R2114	B	C	3B
R2201	B	C	3A
R2202	B	C	3A
R2203	B	C	3B
R2204	B	C	3B
R2205	B	C	3B
R2206	B	C	3B
R2207	B	C	2B
R2208	B	C	2B
R2209	B	C	3A
R2210	B	C	2A
R2211	B	C	2A
R2212	B	C	2A
R2218	B	C	2A
R2219	B	C	2B
R2220	B	C	2B
R2221	B	C	2B
R2222	B	C	2A
R2223	B	C	2A
R2224	B	C	2A
R2225	B	C	2B
R2226	B	C	3B
R2227	B	C	3B
R2401	B	C	3B
R2402	B	C	3B
R2403	B	C	3B
R2404	B	C	3B
R2405	B	C	3A
R2406	B	C	3A
R2407	B	C	3A
R2408	B	C	3A
R2409	B	C	3B
R2410	B	C	3B
R2411	B	C	3B
R2412	B	C	3A
R2413	B	C	3A
R2414	B	C	3A
R2415	B	C	3A
R2416	B	C	3A
R2417	B	C	3A
R2418	B	C	3A
R2419	B	C	3A
R2420	B	C	3A
R2421	B	C	3A
R2422	B	C	3A
R2423	B	C	3A
R2424	B	C	3A
R2425	B	C	3A
R2426	B	C	3A
R2427	B	C	3A
R2428	B	C	3A
R2429	B	C	3A
R2430	A	C	1C
R2501	B	C	2A
R2502	B	C	2A
R2503	B	C	2A
R2504	B	C	2A
R2505	B	C	2A
R2506	B	C	2A
R2507	B	C	2A
R2508	B	C	2A
R2509	B	C	2A
R2510	B	C	2A
R2512	B	C	2A
R2513	B	C	2A
R2514	B	C	2A
R2515	B	C	2A
R2516	B	C	2A
R2517	B	C	2A
R2518	B	C	2B
R2519	B	C	2A
R2520	B	C	2A
R2521	B	C	2B
R2522	B	C	2A
R2523	B	C	2A
R2524	B	C	2A
R2525	B	C	2A
R2526	B	C	2A
R2601	A	C	3A
R2602	A	C	3A
R2603	B	C	2A
R2604	B	C	3A
R2605	B	C	3A
R2606	B	C	3A
R2607	B	C	3A
R2608	B	C	3A
R2609	B	C	2A
R2610	B	C	3A
R2611	B	C	2A
R2612	B	C	2A
R2613	B	C	2A
R2614	B	C	3A
R2615	B	C	2A
R2616	B	C	3A
R2617	B	C	3A
R2618	B	C	3A
R2619	B	C	2A
R2620	B	C	3A
R2621	B	C	2A
R2622	B	C	2A
R2623	B	C	3A
R2624	B	C	3A
R2625	B	C	3A
R2626	B	C	3A
R2627	B	C	3A
R2628	B	C	3A
R2629	B	C	2A
R2630	B	C	3A
R2631	B	C	2A
R2632	B	C	3A
R2633	B	C	2A
R2634	B	C	3A
R2635	B	C	2A
R2636	B	C	3A
R2637	B	C	3A
R2638	B	C	3A
R2639	B	C	3A
R2640	B	C	2A
R2641	B	C	2A
R2642	B	C	2A
R2701	A	C	3A
R2702	A	C	3A
R2705	A	C	3A
R2706	A	C	3A
R2709	A	C	3A
R2710	A	C	3A
R2711	A	C	3A
R2712	A	C	3A
R2713	A	C	3A
R2714	A	C	3A
R2715	A	C	3A
R2717	A	C	3A
R2718	A	C	3A
R2719	A	C	3A
R2720	A	C	3A
R2721	A	C	3A
R2722	A	C	3A
R2723	A	C	3A
R2751	A	C	2A
R2752	A	C	2A
R2753	A	C	3A
R2754	A	C	3A
R2755	A	C	3A
R2756	A	C	3A
R2757	A	C	3A
R2758	A	C	3A
R2759	A	C	3A
R2760	A	C	3A
R2761	A	C	3A
R2762	A	C	2A
R2764	A	C	3A
R2765	A	C	3A
R2766	A	C	3A
R2767	A	C	3A
R2768	A	C	2A
R2769	A	C	3A
R2770	A	C	3A
R2771	A	C	3A
R2772	A	C	3A
R2773	A	C	2A
R2774	A	C	2A
R3001	B	C	3B
R3002	B	C	3B
R3003	B	C	3B
R3004	B	C	3B
R3005	B	C	3B
R3006	B	C	3B
R3007	B	C	3B
R3032	B	C	3B
R3047	B	C	2B
R3048	B	C	2B
R3049	B	C	2B
R3050	B	C	2B
R3051	B	C	2B
R3052	B	C	2B
R3053	B	C	2B
R3054	B	C	3B
R3055	B	C	3B
R3056	B	C	2B
R3057	B	C	2B
R3058	B	C	2B
R3059	B	C	2B
R3060	B	C	2B
R3061	B	C	2B
R3062	B	C	2B
R3063	B	C	2B
R3101	A	C	3C
R3102	A	C	3D
R3103	A	C	3D
R3106	B	C	2C
R3113	A	C	3D
R3115	A	C	3D
R3117	A	C	3D
R3118	A	C	3D
R3119	A	C	3D
R3120	A	C	3D
R3121	A	C	3D
R3127	A	C	3C
R3128	A	C	3D
R3201	B	C	2B
R3202	B	C	2B
R3211	B	C	3C
R3212	B	C	3C
R3213	B	C	3C
R3214	B	C	3C
R3215	B	C	3C
R3221	B	C	3C
R3224	B	C	3C
R3233	B	C	3D
R3234	B	C	3D
R3235	B	C	3D
R3301	B	C	3C
R3303	B	C	3D
R3304	B	C	3D
R3306	B	C	3C
R3307	B	C	3C
R3308	B	C	3D
R3309	B	C	3D
R3310	B	C	3D
R3312	B	C	3D
R3313	B	C	3D
R3314	B	C	3D
R3315	B	C	3D
R3316	B	C	3D
R3317	B	C	3D
R3318	B	C	3D
R3319	B	C	3D
R3320	B	C	3D
R3321	B	C	3D
R3330	B	C	2D
R3331	B	C	2D
R3332	B	C	2D
R3333	B	C	2D
R3334	B	C	2D
R3335	B	C	2D
R3336	B	C	2D
R3337	B	C	2D
R3338	B	C	2D
R3339	B	C	2D
R3340	B	C	2C
R3341	B	C	2C
R3342	B	C	2C
R3343	B	C	2C
R3344	B	C	2C
R3345	B	C	2C
R3346	B	C	2C
R3347	B	C	2C
R3348	B	C	2C
R3349	B	C	2C
R3350	B	C	2C
R3351	B	C	3C
R3352	B	C	3C
R3353	B	C	3C
R3354	B	C	3C
R3355	B	C	3C
R3356	B	C	3C
R3357	B	C	2C
R3358	B	C	3C
R3360	B	C	3C
R3361	B	C	3C
R3362	B	C	3C
R3363	B	C	3C
R3364	B	C	3C
R3365	B	C	3C
R3366	B	C	3C
R3367	B	C	3C
R3379	B	C	2D
R3380	B	C	2C
R3381	B	C	2C
R3382	B	C	2C
R3383	B	C	2C
R3502	A	C	2C
R3504	A	C	2C
R3505	A	C	2C
R3506	A	C	3C
R3507	A	C	3C
R3508	A	C	2C
R3509	A	C	2C
R3510	A	C	3C
R3511	A	C	3C
R3512	A	C	3C
R3513	A	C	3C
R3514	A	C	3C
R3515	A	C	3C
R3516	A	C	3C
R3517	A	C	3C
R3518	A	C	3C
R3519	A	C	3C
R3520	A	C	3C
R3521	A	C	3C
R3523	B	C	3B
R3524	B	C	3B
R3550	A	C	3B
R3703	A	C	1A
R3704	A	C	1A
R3705	A	C	1A
R3706	A	C	1A
R3707	A	C	1A
R3708	A	C	1A
R3709	A	C	1A
R3710	A	C	1A
R3711	A	C	1A
R3712	A	C	1A
R3713	A	C	1A
R3714	A	C	1A
R3715	A	C	1C
R3716	A	C	1A
R3721	A	C	2A
R3722	A	C	1A
R3723	A	C	1A
R3724	A	C	1A
R3725	A	C	1A
R3726	A	C	1A
R3727	A	C	1A
R3730	A	C	1A
R3731	A	C	1A
R3732	A	C	1A
R4203	B	C	3D
R4204	B	C	2D
R4301	B	C	1B
R4302	B	C	1B
R4303	B	C	1B
R4304	B	C	1B
R4305	B	C	1B
R4306	B	C	1B
R4307	B	C	1A
R4308	B	C	2B
R4309	B	C	1B
R4310	B	C	2B
R4311	B	C	1B
R4312	B	C	2B
R4313	B	C	1B
R4314	B	C	2B
R4315	B	C	1A
R4316	B	C	1A
R4317	B	C	1B
R4318	B	C	1A
R4319	B	C	1B
R4320	B	C	1A
R4321	B	C	1A
R4322	B	C	1B
R4323	B	C	1A
R4324	B	C	1B
R4325	B	C	1B
R4326	B	C	1B
R4327	B	C	1B
R4328	A	C	1B
R4329	B	C	1C
R6001	A	C	2C
R6002	A	C	2C
R6003	A	C	2C
R6004	A	C	2C
R6005	A	C	1C
R6006	A	C	2C
R6007	A	C	1C
R6008	A	C	2C
R6009	A	C	2B
R6010	A	C	2C
R6011	A	C	1B
R6012	A	C	1B
R6014	A	C	1C
R6016	A	C	1B
R6017	A	C	1B
R6018	A	C	2C
R6101	A	C	1D
R6102	A	C	1D
R6103	A	C	1D
R6104	A	C	1D
R6105	A	C	1D
R6106	A	C	1D
R6107	A	C	2D
R6108	A	C	2D
R6109	A	C	1C
R6110	A	C	2D
R6111	A	C	2D
R6112	A	C	2C
R6113	A	C	2C
R6114	A	C	1D
R6115	A	C	2C
R6116	A	C	2C
R6117	A	C	2C
R6118	A	C	2D
R6119	A	C	2C
R6120	A	C	2D
R6121	A	C	1C
R6122	A	C	1C
R6123	A	C	1C
R6124	B	C	2B
R6125	B	C	2B
R6126	B	C	2B
R6127	B	C	2B
R6128	B	C	2C
R6129	B	C	2C
R6130	B	C	2C
R6131	B	C	2C
R6132	B	C	2C
R6133	B	C	2C
R6134	B	C	1D
R6135	B	C	2D
R6136	B	C	2D
R6137	B	C	2D
R6138	B	C	2C
R6139	B	C	2D
R6140	B	C	2D
R6141	B	C	1D
R6142	B	C	1D
R6143	B	C	2D
R6144	B	C	2C
R6145	B	C	2B
R6146	B	C	2B
R6147	B	C	2B
R6148	B	C	1D
R6149	B	C	2D
R6150	A	C	1D
R6151	A	C	1D
R6152	B	C	1C
R6153	B	C	2C
R6154	B	C	2B
R6155	B	C	2B
R6603	A	C	2D
R6609	A	C	2C
R6610	A	C	2C
R6612	A	C	2D
R6613	A	C	3D
R6617	A	C	2D
R6621	A	C	2D
R6622	A	C	2D
R6623	A	C	3D
R6625	A	C	2D
R6626	A	C	2D
R6629	A	C	2D
R7601	A	C	1D
R7602	A	C	1D
R7603	A	C	1D
R7604	A	C	1D
R7606	B	C	1D
R7607	B	C	1D
R7608	B	C	1D
R7609	A	C	1D
R7617	A	C	2D
R7619	A	C	1D
R7620	A	C	2D
R7622	A	C	2D
R7623	A	C	1C
RA1001	A	C	2B
RA1002	A	C	2B
RA1003	A	C	2B
RA1004	A	C	2B
RA1005	A	C	2B
RA1006	A	C	2B
RA1401	A	C	2B
RA1402	A	C	3B
RA1403	A	C	3B
RA4301	B	C	1B
RA4302	B	C	1B
RA4303	B	C	1B
RA4304	B	C	1B
OTHER			
F1	A	C	1C
F2	A	C	1C
F3	A	C	1C
F4	A	C	1D
F5	A	C	2C
F6	A	C	1D
F7	A	C	2D
J3101	A	C	3D
S1001	A	C	3D
T6101	B	C	1D
X1001	A	C	1B
X1002	A	C	1A
X3001	B	C	3B
X3301	B	C	2C

COMPONENT SIDE (A)

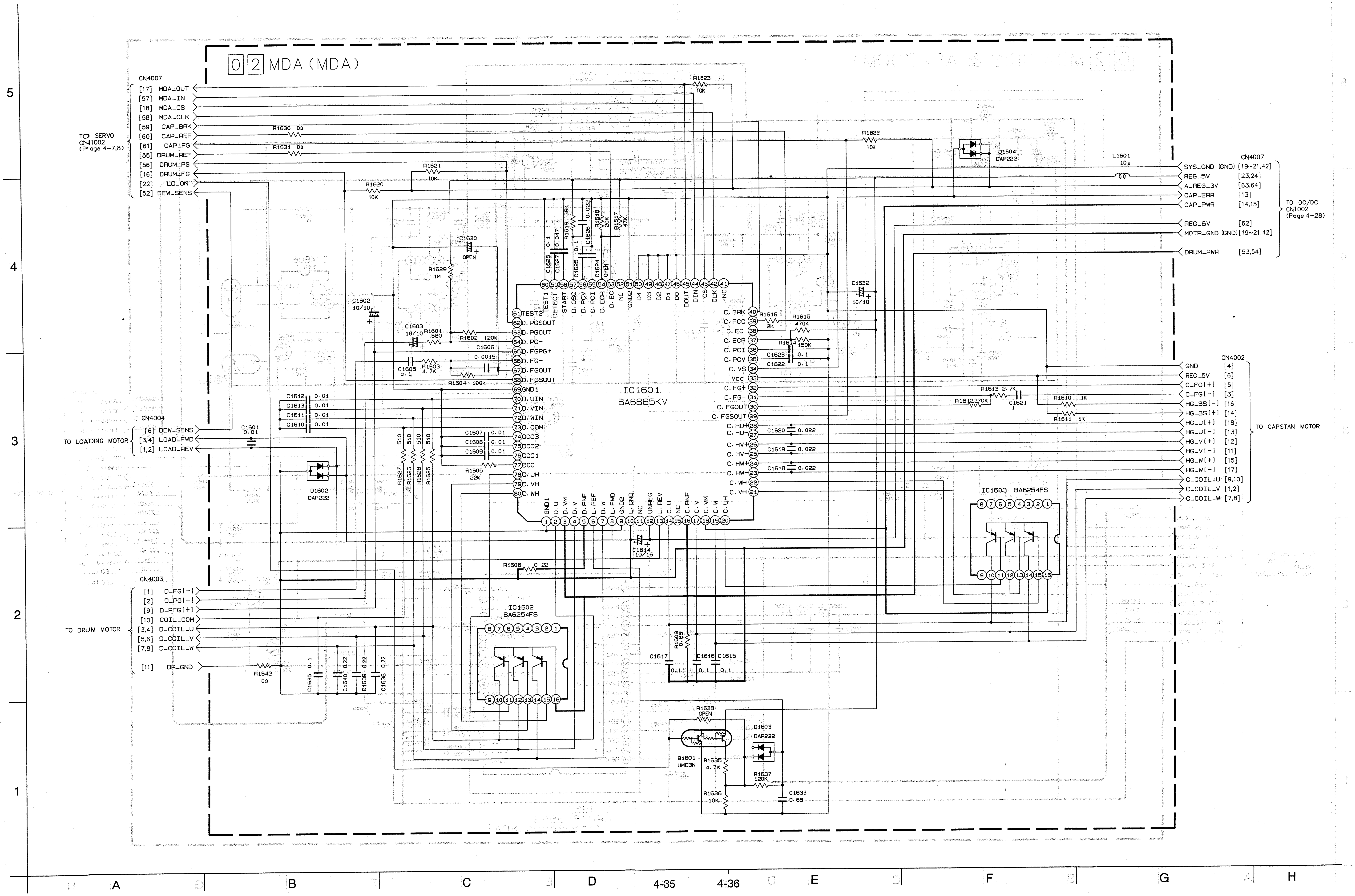

D
C
B
A
1
2
3
MAIN PWB
YB10245-01-05
CN1011
CN1003
CN1005
CN1017
CN1018
CN1001
CN1002
CN1016
CN1013
CN1015
CN1014
J3101
S1001
IC3101
IC3401
IC3501
IC1002
IC1401
IC1001
IC1003
IC1004
IC2751
IC3701
IC6101
IC1009
X1002
F1~F3
2A
F5~F7
0.5A

.17 IR SCHEMATIC DIAGRAM


0 2 MDA (IR)
S1801
EJECT SW
NSW0104-001X
CN4007
TO SYSCON, DC/DC CN1002 (Page 4-5,28)
[79] EJT_SW
[63,64] A_REG_3V
[23,24] REG_5V
[19~21,42] GND
[49] TALLY
[3] IR_RMC
R1802
47
R1801
390
IC1801
RS-171-X
2
1
OUT
Vcc
GND
GND
3
4
C1801
10/6.3
D1801
TALLY LAMP
TLSU1002/LM/-X
Q1801
DTC143XE

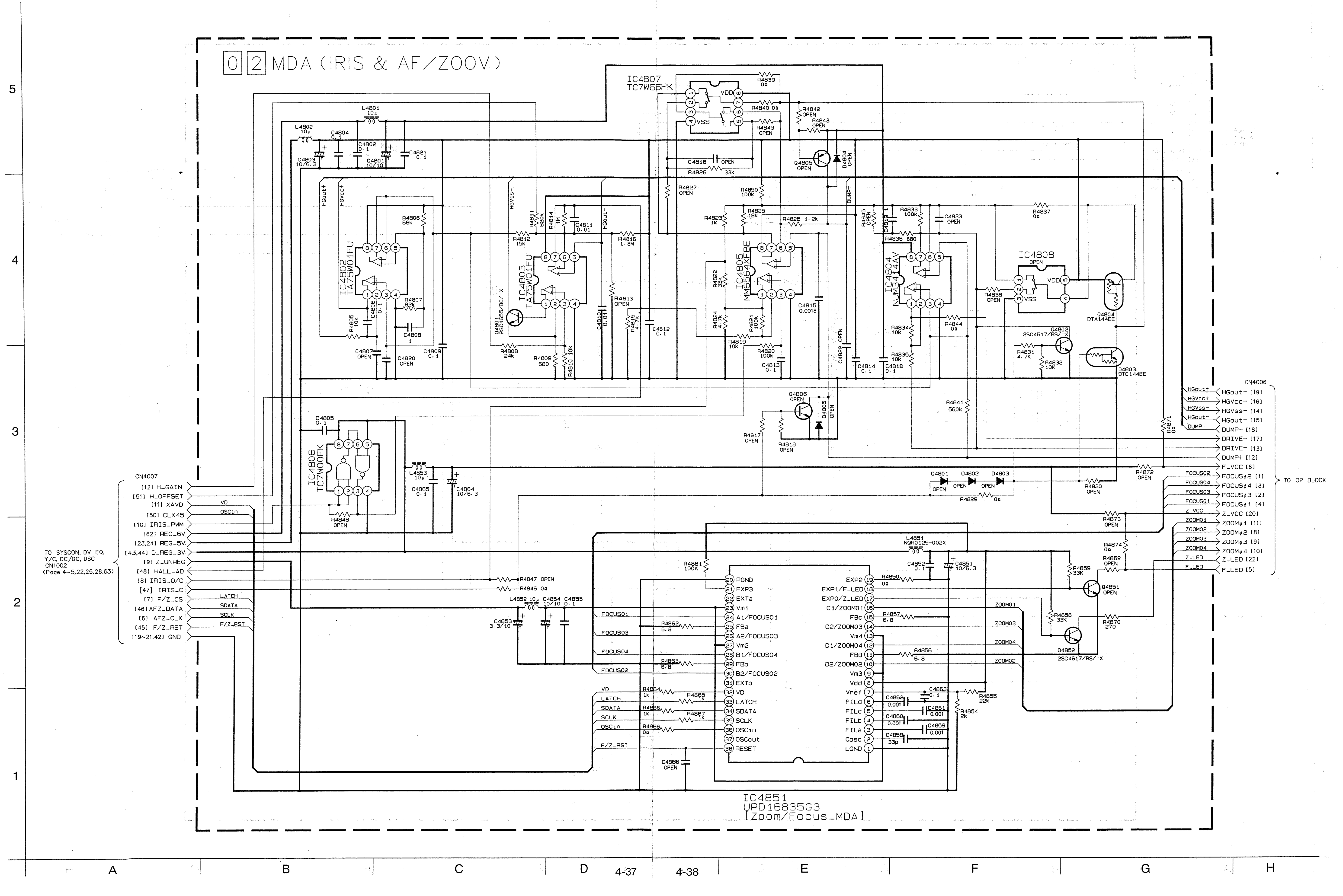
A B C D

4.18 MDA SCHEMATIC DIAGRAM



02 MDA (MDA)
CN4007
[17] MDA_OUT
[57] MDA_IN
[18] MDA_CS
[58] MDA_CLK
[59] CAP_BRK
[60] CAP_REF
[61] CAP_FG
[55] DRUM_REF
[56] DRUM_PG
[16] DRUM_FG
[22] LD_ON
[52] DEW_SENS
TO SERVO CN1002 (Page 4-7,8)
R1630 0Ω
R1631 0Ω
R1623 10K
R1622 10K
R1621 10K
R1620 10K
D1604 DAP222
L1601 10μ
CN4007
SYS_GND (GND) [19~21,42]
REG_5V [23,24]
A_REG_3V [63,64]
CAP_ERR [13]
CAP_PWR [14,15]
REG_6V [62]
MOTR_GND (GND) [19~21,42]
DRUM_PWR [53,54]
TO DC/DC CN1002 (Page 4-28)
C1628 0.1
C1627 0.047
R1619 39K
C1625 0.1
C1626 0.022
R1618 20K
C1624 OPEN
R1617 47K
C1630 OPEN
R1629 1M
C1602 10/10
C1603 10/10
R1601 680
R1602 120K
C1606 0.0015
C1605 0.1
R1603 4.7K
R1604 100K
C1632 10/10
R1616 2K
R1615 470K
R1614 150K
C1623 0.1
C1622 0.1
IC1601 BA6865KV
TEST2 TEST1 DETECT START D.OSC D.PCV D.PCI D.ECR D.EC NC GND2 D4 D3 D2 D1 D0 DOUT DIN CS CLK NC
D.PGSOUT D.PGOUT D.PG- D.FGPG+ D.FG- D.FGOUT D.FGSOUT GND1 D.UIN D.VIN D.WIN D.COM DCC3 DCC2 DCC1 DCC D.UH D.VH D.WH
C.BRK C.RCC C.EC C.ECR C.PCI C.PCV C.VS VCC C.FG+ C.FG- C.FGOUT C.FGSOUT C.HU+ C.HU- C.HV+ C.HV- C.HW+ C.HW- C.WH C.VH
GND1 D.U D.VM D.V D.RNF L.REF D.W L.FWD GND2 L.GND NC UNREG L.REV C.U NC C.RNF C.V C.VM C.W C.UH
C1612 0.01
C1613 0.01
C1611 0.01
C1610 0.01
C1607 0.01
C1608 0.01
C1609 0.01
R1605 22K
R1627 510
R1626 510
R1628 510
R1625 510
CN4004
[6] DEW_SENS
[3,4] LOAD_FWD
[1,2] LOAD_REV
TO LOADING MOTOR
C1601 0.01
D1602 DAP222
C1614 10/16
R1606 0.22
R1613 2.7K
R1612 270K
C1621 1
R1610 1K
R1611 1K
C1620 0.022
C1619 0.022
C1618 0.022
CN4002
GND [4]
REG_5V [6]
C_FG(+) [5]
C_FG(-) [3]
HG_BS(-) [16]
HG_BS(+) [14]
HG_U(+) [18]
HG_U(-) [13]
HG_V(+) [12]
HG_V(-) [11]
HG_W(+) [15]
HG_W(-) [17]
C_COIL_U [9,10]
C_COIL_V [1,2]
C_COIL_W [7,8]
TO CAPSTAN MOTOR
IC1603 BA6254FS
CN4003
[1] D_FG(-)
[2] D_PG(-)
[9] D_PFG(+)
[10] COIL_COM
[3,4] D_COIL_U
[5,6] D_COIL_V
[7,8] D_COIL_W
[11] DR_GND
TO DRUM MOTOR
R1642 0Ω
C1635 0.1
C1640 0.22
C1639 0.22
C1638 0.22
IC1602 BA6254FS
R1609 0.68
C1617 0.1
C1616 0.1
C1615 0.1
R1638 OPEN
D1603 DAP222
Q1601 UMC3N
R1635 4.7K
R1637 120K
R1636 10K
C1633 0.68
1 2 3 4 5
A B C D E F G H

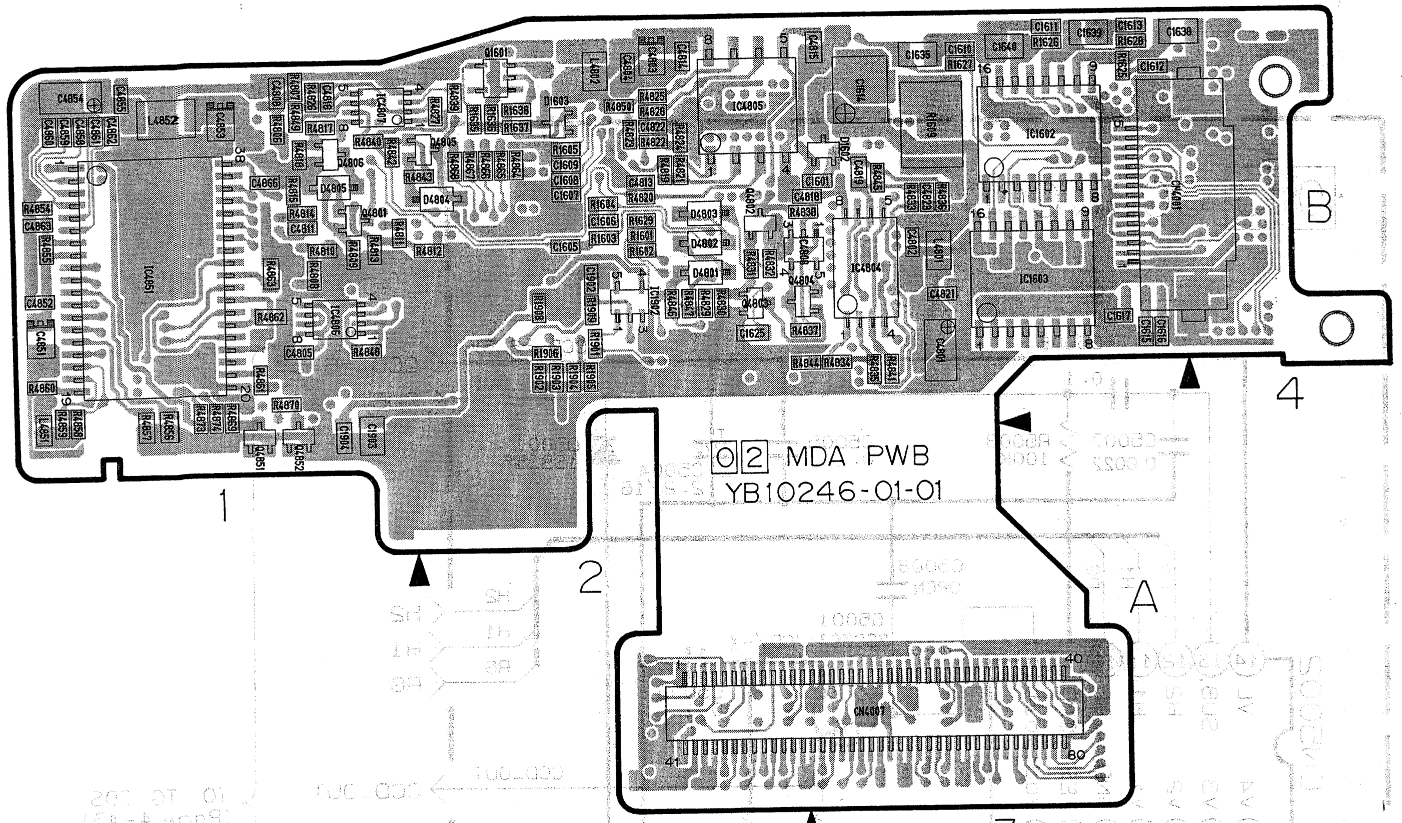
4.19 IRIS & AF/ZOOM SCHEMATIC DIAGRAM



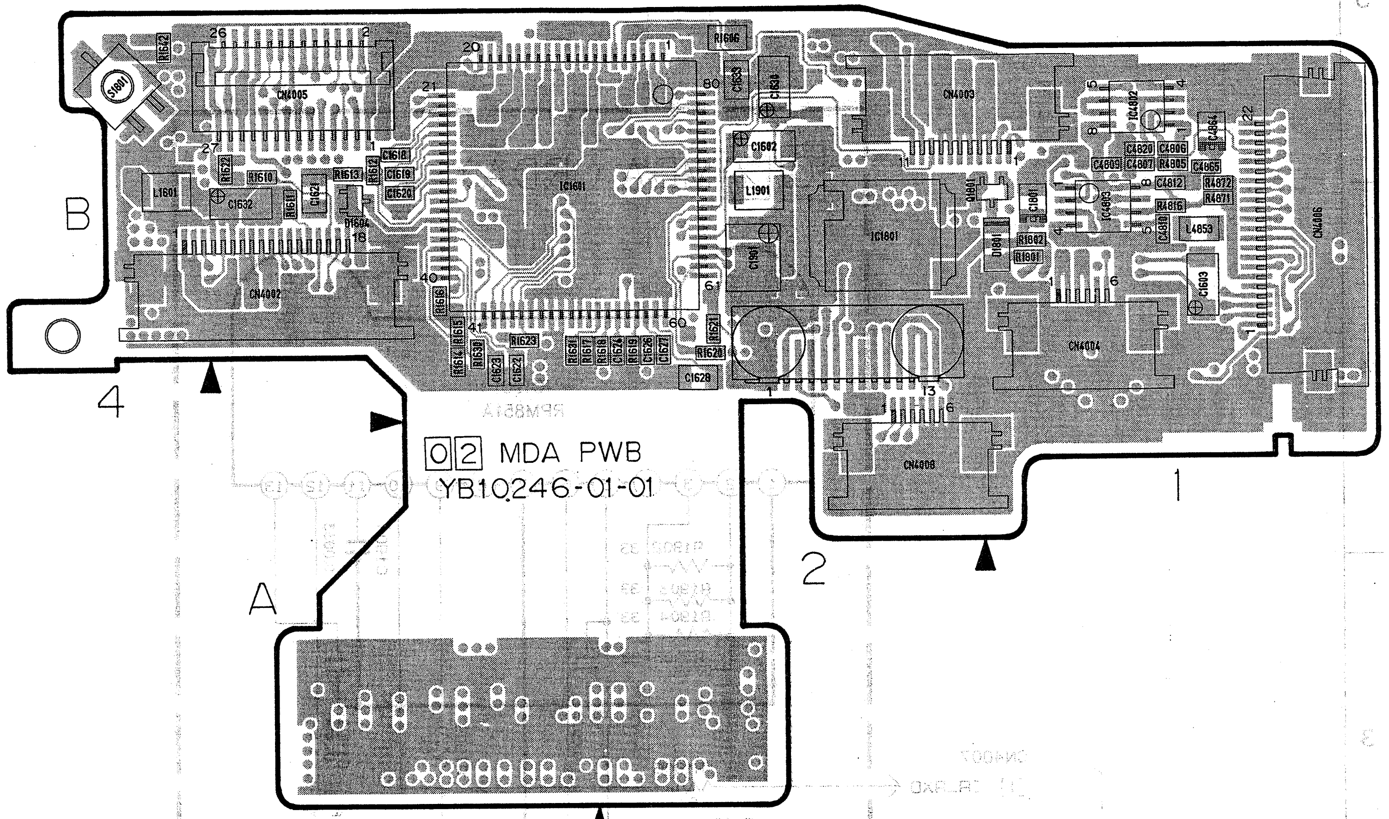
02 MDA (IRIS & AF/ZOOM)
IC4807 TC7W66FK
IC4802 TA75W01FU
IC4803 TA75W01FU
IC4805 MM6564XFBE
IC4804 NJM3414AV
IC4808
IC4806 TC7W00FK
IC4851 UPD16835G3 [Zoom/Focus_MDA]
Q4801 2SC4655/BC/-x
Q4802 2SC4617/RS/-x
Q4803 DTC144EE
Q4804 DTA144EE
Q4805 OPEN
Q4806 OPEN
Q4851 OPEN
Q4852 2SC4617/RS/-x
L4801 10μ
L4802 10μ
L4851 NQR0129-002X
L4852 10μ
L4853 10μ
CN4007
[12] H_GAIN
[51] H_OFFSET
[11] XAVD
[50] CLK45
[10] IRIS_PWM
[62] REG_6V
[23,24] REG_5V
[43,44] D_REG_3V
[9] Z_UNREG
[48] HALL_AD
[8] IRIS_O/C
[47] IRIS_C
[7] F/Z_CS
[46] AFZ_DATA
[6] AFZ_CLK
[45] F/Z_RST
[19~21,42] GND
TO SYSCON, DV EQ, Y/C, DC/DC, DSC CN1002 (Page 4-5,22,25,28,53)
CN4006
HGout+ [19]
HGVcc+ [16]
HGVss- [14]
HGout- [15]
DUMP- [18]
DRIVE- [17]
DRIVE+ [13]
DUMP+ [12]
F_VCC [6]
FOCUSφ2 [1]
FOCUSφ4 [3]
FOCUSφ3 [2]
FOCUSφ1 [4]
Z_VCC [20]
ZOOMφ1 [11]
ZOOMφ2 [8]
ZOOMφ3 [9]
ZOOMφ4 [10]
Z_LED [22]
F_LED [5]
TO OP BLOCK
PGND
EXP3
EXTa
Vm1
A1/FOCUS01
FBa
A2/FOCUS03
Vm2
B1/FOCUS04
FBb
B2/FOCUS02
EXTb
VD
LATCH
SDATA
SCLK
OSCin
OSCout
RESET
EXP2
EXP1/F_LED
EXP0/Z_LED
C1/ZOOM01
FBc
C2/ZOOM03
Vm4
D1/ZOOM04
FBd
D2/ZOOM02
Vm3
Vdd
Vref
FILd
FILc
FILb
FILa
Cosc
LGND
A
B
C
D
E
F
G
H
1
2
3
4
5

4.20 MDA CIRCUIT BOARD

FOIL SIDE (B)



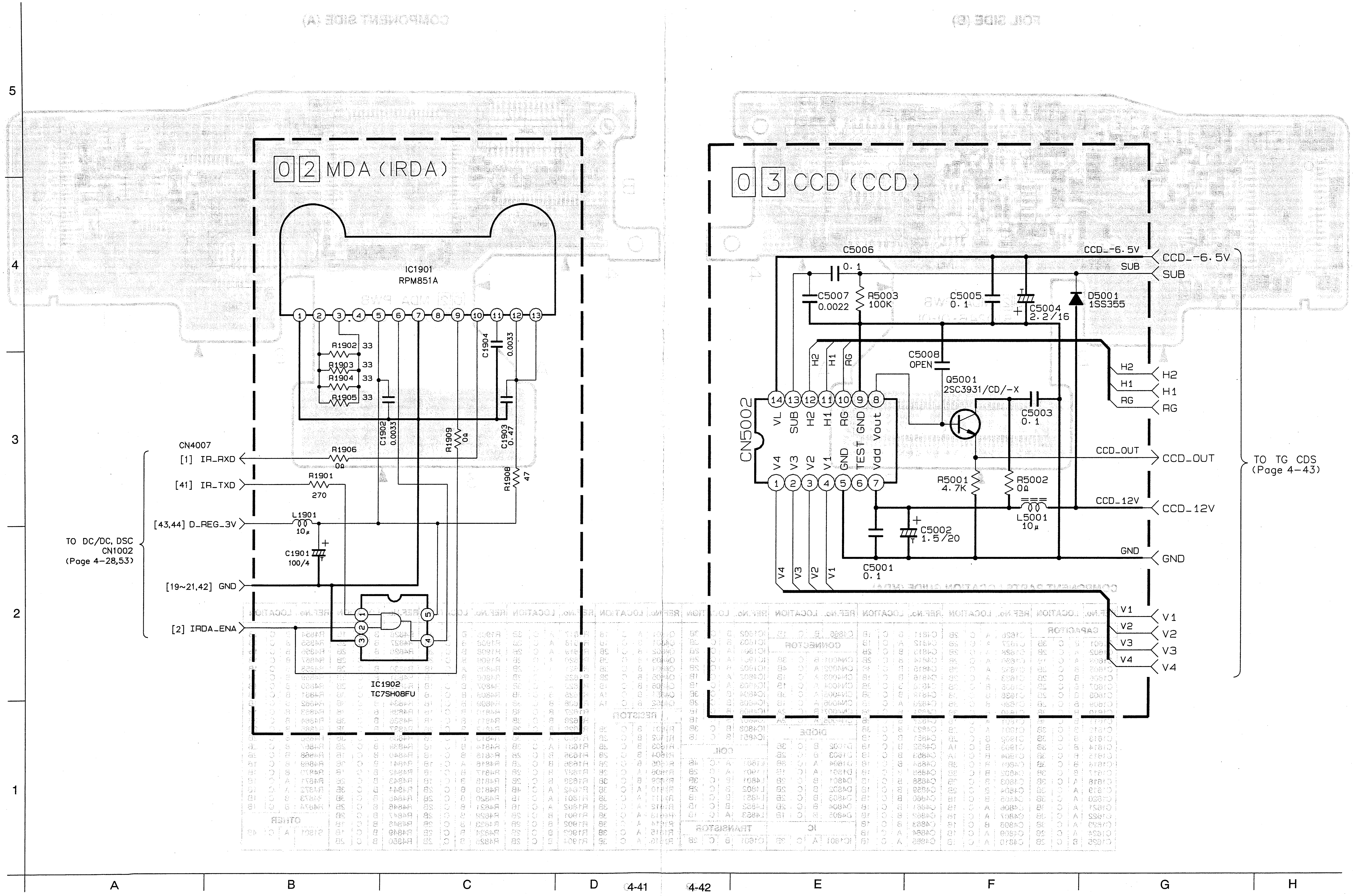
COMPONENT SIDE (A)



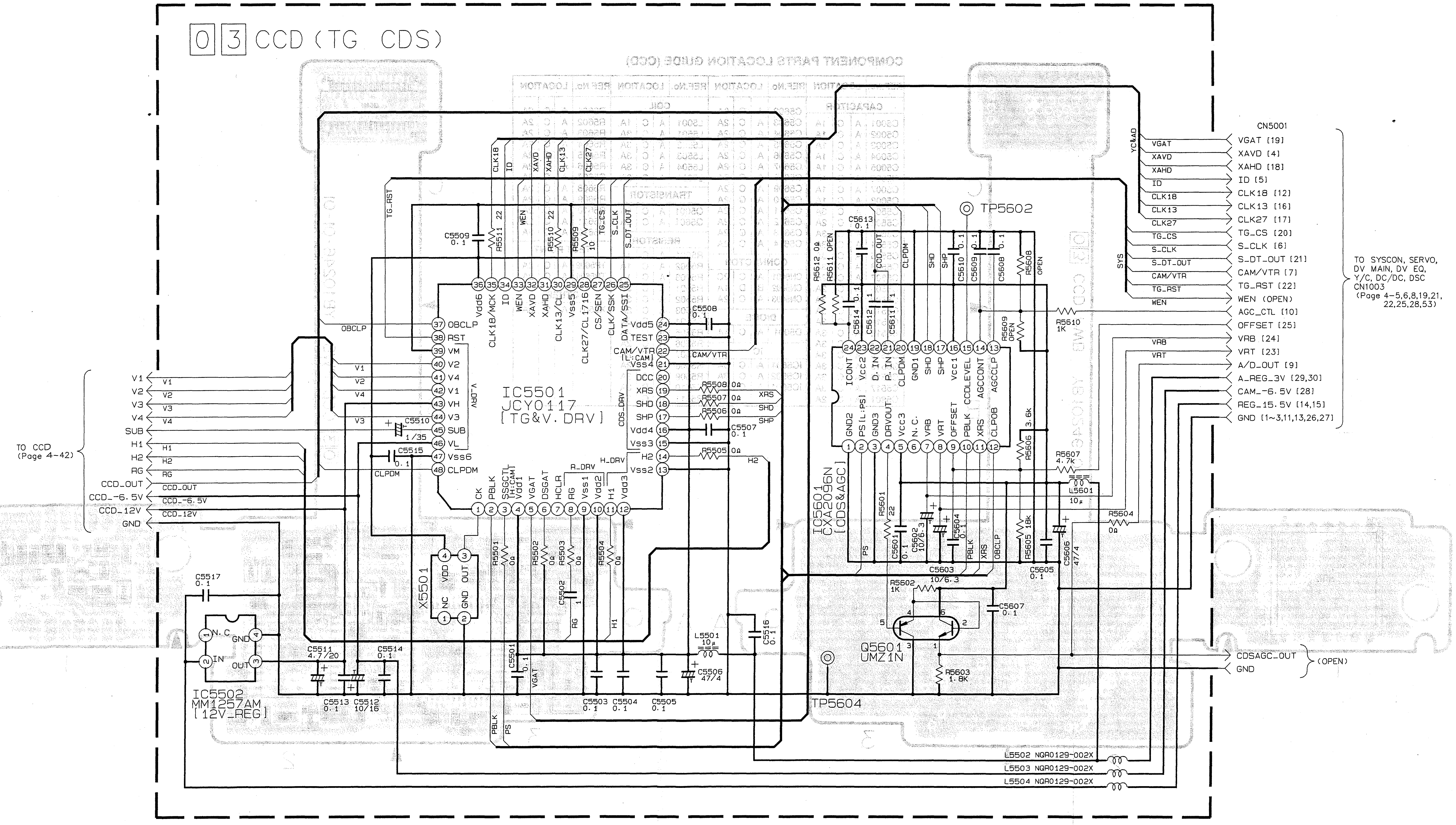
COMPONENT PARTS LOCATION GUIDE (MDA)

REF.No.	LOCATION		
CAPACITOR			
C1601	B	C	3B
C1602	A	C	2B
C1603	A	C	1B
C1605	B	C	2B
C1606	B	C	2B
C1607	B	C	2B
C1608	B	C	2B
C1609	B	C	2B
C1610	B	C	3B
C1611	B	C	3B
C1612	B	C	3B
C1613	B	C	3B
C1614	B	C	3B
C1615	B	C	3B
C1616	B	C	3B
C1617	B	C	3B
C1618	A	C	3B
C1619	A	C	3B
C1620	A	C	3B
C1621	A	C	3B
C1622	A	C	3B
C1623	A	C	3B
C1624	A	C	2B
C1625	B	C	2B
C1626	A	C	2B
C1627	A	C	2B
C1628	A	C	2B
C1630	A	C	2B
C1632	A	C	3B
C1633	A	C	2B
C1635	B	C	3B
C1638	B	C	3B
C1639	B	C	3B
C1640	B	C	3B
C1801	A	C	1B
C1901	A	C	2B
C1902	B	C	2B
C1903	B	C	1A
C1904	B	C	1A
C4801	B	C	3B
C4802	B	C	3B
C4803	B	C	2B
C4804	B	C	2B
C4805	B	C	1B
C4806	A	C	1B
C4807	A	C	1B
C4808	B	C	1B
C4809	A	C	1B
C4810	A	C	1B
C4811	B	C	1B
C4812	A	C	1B
C4813	B	C	2B
C4814	B	C	2B
C4815	B	C	3B
C4816	B	C	1B
C4818	B	C	3B
C4819	B	C	3B
C4820	A	C	1B
C4821	B	C	3B
C4822	B	C	2B
C4823	B	C	3B
C4851	B	C	1B
C4852	B	C	1B
C4853	B	C	1B
C4854	B	C	1B
C4855	B	C	1B
C4858	B	C	1B
C4859	B	C	1B
C4860	B	C	1B
C4861	B	C	1B
C4862	B	C	1B
C4863	B	C	1B
C4864	A	C	1B
C4865	A	C	1B
C4866	B	C	1B
CONNECTOR			
CN4001	B	C	3B
CN4002	A	C	4B
CN4003	A	C	1B
CN4004	A	C	1B
CN4005	A	C	3B
CN4006	A	C	1B
CN4007	B	C	2A
CN4008	A	C	2A
DIODE			
D1602	B	C	3B
D1603	B	C	2B
D1604	A	C	3B
D1801	A	C	1B
D4801	B	C	2B
D4802	B	C	2B
D4803	B	C	2B
D4804	B	C	2B
D4805	B	C	1B
IC			
IC1601	A	C	3B
IC1602	B	C	3B
IC1603	B	C	3B
IC1801	A	C	2B
IC1901	A	C	2B
IC1902	B	C	2B
IC4802	A	C	1B
IC4803	A	C	1B
IC4804	B	C	3B
IC4805	B	C	2B
IC4806	B	C	1B
IC4807	B	C	1B
IC4808	B	C	3B
IC4851	B	C	1B
COIL			
L1601	A	C	4B
L1901	A	C	2B
L4801	B	C	3B
L4802	B	C	2B
L4851	B	C	1B
L4852	B	C	1B
L4853	A	C	1B
TRANSISTOR			
Q1601	B	C	2B
Q1801	A	C	1B
Q4801	B	C	1B
Q4802	B	C	2B
Q4803	B	C	2B
Q4804	B	C	3B
Q4805	B	C	2B
Q4806	B	C	1B
Q4851	B	C	1A
Q4852	B	C	1A
RESISTOR			
R1601	B	C	2B
R1602	B	C	2B
R1603	B	C	2B
R1604	B	C	2B
R1605	B	C	2B
R1606	A	C	2B
R1609	B	C	3B
R1610	A	C	3B
R1611	A	C	3B
R1612	A	C	3B
R1613	A	C	3B
R1614	A	C	3B
R1615	A	C	3B
R1616	A	C	3B
R1617	A	C	3B
R1618	A	C	2B
R1619	A	C	2B
R1620	A	C	2B
R1621	A	C	2B
R1622	A	C	3B
R1623	A	C	3B
R1625	B	C	3B
R1626	B	C	3B
R1627	B	C	3B
R1628	B	C	3B
R1629	B	C	2B
R1630	A	C	3B
R1631	A	C	3B
R1635	B	C	2B
R1636	B	C	2B
R1637	B	C	2B
R1638	B	C	2B
R1642	A	C	4B
R1801	A	C	1B
R1802	A	C	1B
R1901	B	C	2B
R1902	B	C	2B
R1903	B	C	2B
R1904	B	C	2B
R1905	B	C	2B
R1906	B	C	2B
R1908	B	C	2B
R1909	B	C	2B
R4805	A	C	1B
R4806	B	C	1B
R4807	B	C	1B
R4808	B	C	1B
R4809	B	C	1B
R4810	B	C	1B
R4811	B	C	1B
R4812	B	C	2B
R4813	B	C	1B
R4814	B	C	1B
R4815	B	C	1B
R4816	A	C	1B
R4817	B	C	1B
R4818	B	C	1B
R4819	B	C	2B
R4820	B	C	2B
R4821	B	C	2B
R4822	B	C	2B
R4823	B	C	2B
R4824	B	C	2B
R4825	B	C	2B
R4826	B	C	1B
R4827	B	C	2B
R4828	B	C	2B
R4829	B	C	2B
R4830	B	C	2B
R4831	B	C	2B
R4832	B	C	2B
R4833	B	C	3B
R4834	B	C	3B
R4835	B	C	3B
R4836	B	C	3B
R4837	B	C	3B
R4838	B	C	3B
R4839	B	C	2B
R4840	B	C	1B
R4841	B	C	3B
R4842	B	C	1B
R4843	B	C	2B
R4844	B	C	3B
R4845	B	C	3B
R4846	B	C	2B
R4847	B	C	2B
R4848	B	C	1B
R4849	B	C	1B
R4850	B	C	2B
R4854	B	C	1B
R4855	B	C	1B
R4856	B	C	1B
R4857	B	C	1B
R4858	B	C	1B
R4859	B	C	1B
R4860	B	C	1B
R4861	B	C	1B
R4862	B	C	1B
R4863	B	C	1B
R4864	B	C	2B
R4865	B	C	2B
R4866	B	C	2B
R4867	B	C	2B
R4868	B	C	2B
R4869	B	C	1B
R4870	B	C	1B
R4871	A	C	1B
R4872	A	C	1B
R4873	B	C	1B
R4874	B	C	1B
OTHER			
S1801	A	C	4B

4.21 IRDA AND CCD SCHEMATIC DIAGRAMS

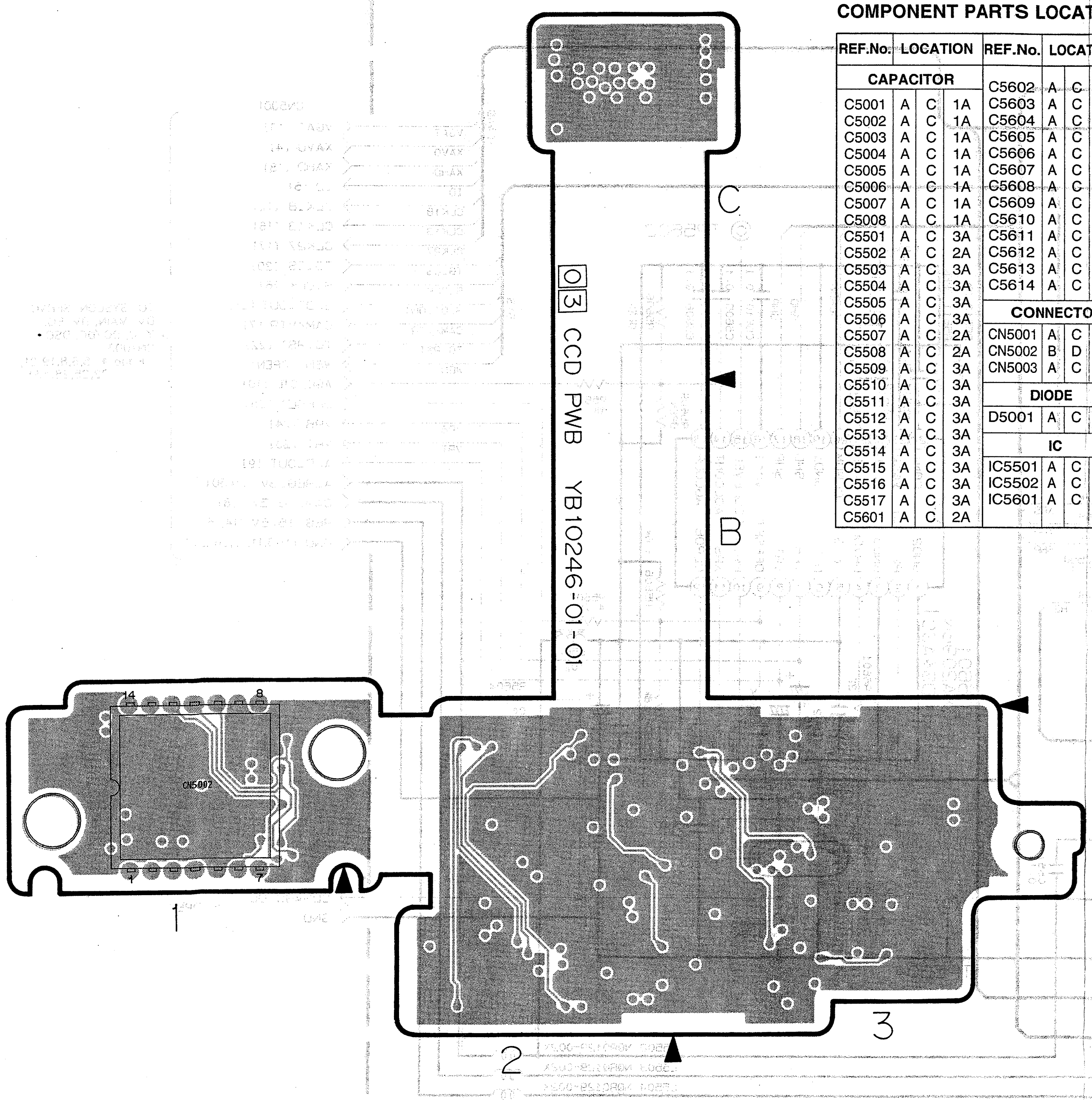

02 MDA (IRDA)
IC1901
RPM851A
R1902 33
R1903 33
R1904 33
R1905 33
C1904 0.0033
C1902 0.0033
R1909 0Ω
C1903 0.47
R1908 47
CN4007
[1] IR_RXD
R1906 0Ω
[41] IR_TXD
R1901 270
[43,44] D_REG_3V
L1901 10μ
C1901 100/4
[19~21,42] GND
[2] IRDA_ENA
TO DC/DC, DSC CN1002 (Page 4-28,53)
IC1902
TC7SH08FU
03 CCD (CCD)
C5006 0.1
C5007 0.0022
R5003 100K
C5005 0.1
C5004 2.2/16
D5001 1SS355
CCD_-6.5V
SUB
C5008 OPEN
Q5001 2SC3931/CD/-X
C5003 0.1
H2
H1
RG
CN5002
VL
SUB
H2
H1
RG
GND
TEST
Vdd
Vout
V4
V3
V2
V1
GND
CCD_OUT
R5001 4.7K
R5002 0Ω
L5001 10μ
CCD_12V
C5002 1.5/20
C5001 0.1
GND
V1
V2
V3
V4
TO TG CDS (Page 4-43)
A
B
C
D
E
F
G
H
1
2
3
4
5

4.22 TG CDS SCHEMATIC DIAGRAM

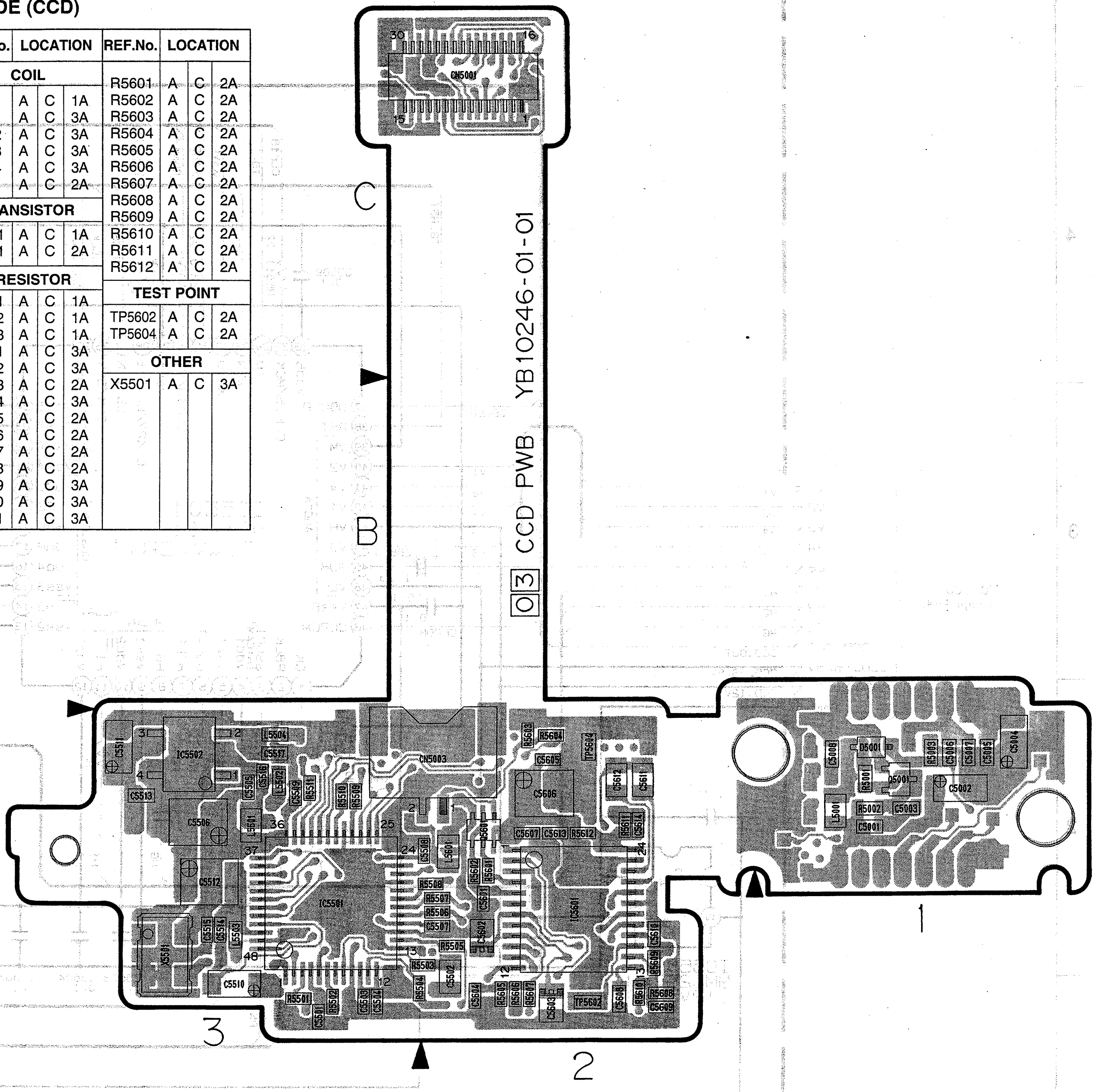

03 CCD (TG CDS)
IC5501
JCY0117
[TG&V.DRV]
IC5601
CXA2096N
[CDS&AGC]
IC5502
MM1257AM
[12V_REG]
X5501
Q5601
UMZ1N
TP5602
TP5604
CN5001
VGAT [19]
XAVD [4]
XAHD [18]
ID [5]
CLK18 [12]
CLK13 [16]
CLK27 [17]
TG_CS [20]
S_CLK [6]
S_DT_OUT [21]
CAM/VTR [7]
TG_RST [22]
WEN (OPEN)
AGC_CTL [10]
OFFSET [25]
VRB [24]
VRT [23]
A/D_OUT [9]
A_REG_3V [29,30]
CAM_-6.5V [28]
REG_15.5V [14,15]
GND [1~3,11,13,26,27]
TO SYSCON, SERVO, DV MAIN, DV EQ, Y/C, DC/DC, DSC CN1003
(Page 4-5,6,8,19,21, 22,25,28,53)
CDSAGC_OUT
GND
(OPEN)
TO CCD
(Page 4-42)
V1
V2
V3
V4
SUB
H1
H2
RG
CCD_OUT
CCD_-6.5V
CCD_-12V
GND
OBCLP
RST
VM
VH
VL
Vss6
CLPDM
Vdd6
CLK18/MCK
WEN
XAVD
XAHD
CLK13/CL
Vss5
CLK27/CL1716
CS/SEN
CLK/SSK
DATA/SSI
Vdd5
TEST
CAM/VTR [L:CAM]
Vss4
DCC
XRS
SHD
SHP
Vdd4
Vss3
Vss2
CK
PBLK
SSGCTL [H:CAM]
Vdd1
VGAT
DSGAT
HCLR
Vss1
Vdd2
Vdd3
V_DRV
CDS_DRV
R_DRV
H_DRV
TG_RST
YC&AD
SYS
ICONT
Vcc2
D.IN
P.IN
CLPDM
GND1
SHD
SHP
Vcc1
CCDLEVEL
AGCCONT
AGCCLP
GND2
PS[L:PS]
GND3
DRVOUT
Vcc3
N.C.
VRB
VRT
OFFSET
PBLK
XRS
CLPOB
CCD_OUT
NC
VDD
OUT
N.C
IN
C5509 0.1
R5511 22
R5510 22
R5509 10
C5508 0.1
R5508 0Ω
R5507 0Ω
R5506 0Ω
R5505 0Ω
C5507 0.1
C5510 1/35
C5515 0.1
R5501 0Ω
R5502 0Ω
R5503 0Ω
R5504 0Ω
C5502 1
C5501 0.1
C5503 0.1
C5504 0.1
C5505 0.1
C5506 47/4
L5501 10μ
C5516 0.1
C5517 0.1
C5511 4.7/20
C5512 10/16
C5513 0.1
C5514 0.1
C5613 0.1
R5612 0Ω
R5611 OPEN
C5614 0.1
C5612 1
C5611 1
C5610 0.1
C5609 0.1
C5608 0.1
R5608 OPEN
R5609 OPEN
R5610 1K
R5606 3.6K
R5607 4.7K
L5601 10μ
R5604 0Ω
R5601 22
C5601 0.1
C5602 10/6.3
C5603 10/6.3
C5604 0.1
R5605 18K
C5605 0.1
C5606 47/4
R5602 1K
C5607 0.1
R5603 1.8K
L5502 NQR0129-002X
L5503 NQR0129-002X
L5504 NQR0129-002X

4.23 CCD CIRCUIT BOARD

FOIL SIDE (B)


CN5002
14
8
1
7
C
B
A
1
2
3
03 CCD PWB YB10246-01-01

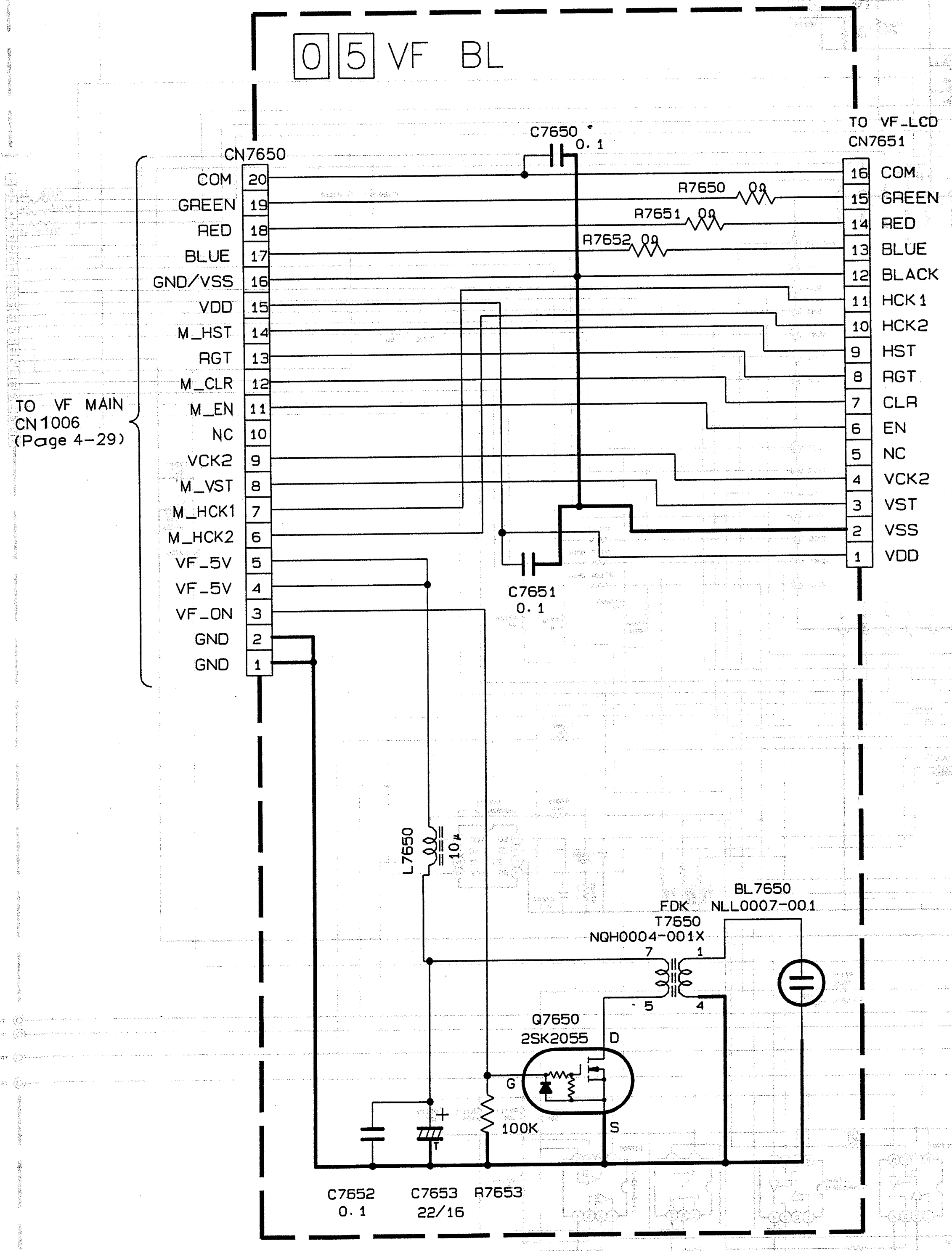
COMPONENT SIDE (A)


CN5001
30
16
15
1
CN5003
IC5501
IC5502
IC5601
C
B
A
1
2
3
03 CCD PWB YB10246-01-01
TP5602
TP5604
D5001
L5001

COMPONENT PARTS LOCATION GUIDE (CCD)

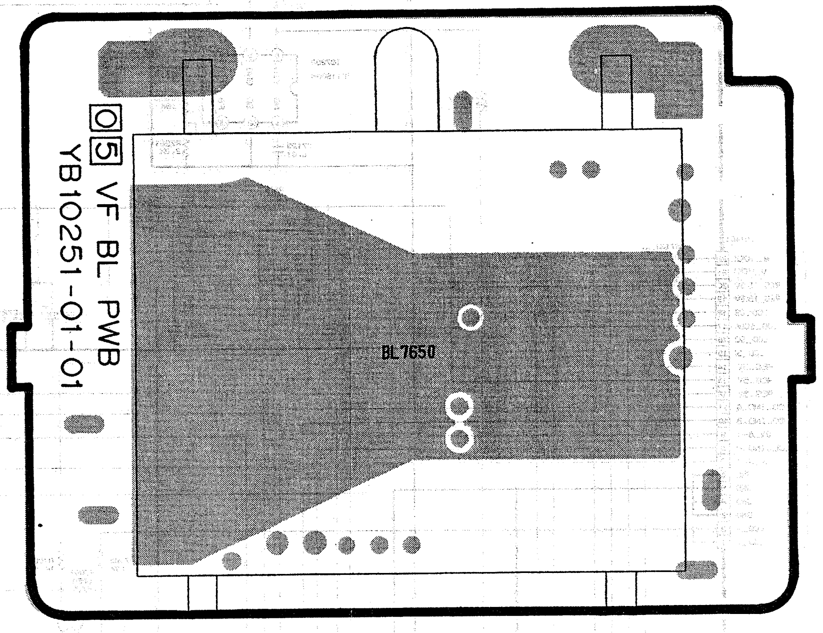
REF.No.	LOCATION		
CAPACITOR			
C5001	A	C	1A
C5002	A	C	1A
C5003	A	C	1A
C5004	A	C	1A
C5005	A	C	1A
C5006	A	C	1A
C5007	A	C	1A
C5008	A	C	1A
C5501	A	C	3A
C5502	A	C	2A
C5503	A	C	3A
C5504	A	C	3A
C5505	A	C	3A
C5506	A	C	3A
C5507	A	C	2A
C5508	A	C	2A
C5509	A	C	3A
C5510	A	C	3A
C5511	A	C	3A
C5512	A	C	3A
C5513	A	C	3A
C5514	A	C	3A
C5515	A	C	3A
C5516	A	C	3A
C5517	A	C	3A
C5601	A	C	2A
C5602	A	C	2A
C5603	A	C	2A
C5604	A	C	2A
C5605	A	C	2A
C5606	A	C	2A
C5607	A	C	2A
C5608	A	C	2A
C5609	A	C	2A
C5610	A	C	2A
C5611	A	C	2A
C5612	A	C	2A
C5613	A	C	2A
C5614	A	C	2A
CONNECTOR			
CN5001	A	C	2C
CN5002	B	D	1A
CN5003	A	C	2A
DIODE			
D5001	A	C	1A
IC			
IC5501	A	C	3A
IC5502	A	C	3A
IC5601	A	C	2A
COIL			
L5001	A	C	1A
L5501	A	C	3A
L5502	A	C	3A
L5503	A	C	3A
L5504	A	C	3A
L5601	A	C	2A
TRANSISTOR			
Q5001	A	C	1A
Q5601	A	C	2A
RESISTOR			
R5001	A	C	1A
R5002	A	C	1A
R5003	A	C	1A
R5501	A	C	3A
R5502	A	C	3A
R5503	A	C	2A
R5504	A	C	3A
R5505	A	C	2A
R5506	A	C	2A
R5507	A	C	2A
R5508	A	C	2A
R5509	A	C	3A
R5510	A	C	3A
R5511	A	C	3A
R5601	A	C	2A
R5602	A	C	2A
R5603	A	C	2A
R5604	A	C	2A
R5605	A	C	2A
R5606	A	C	2A
R5607	A	C	2A
R5608	A	C	2A
R5609	A	C	2A
R5610	A	C	2A
R5611	A	C	2A
R5612	A	C	2A
TEST POINT			
TP5602	A	C	2A
TP5604	A	C	2A
OTHER			
X5501	A	C	3A

4.24 VF BL SCHEMATIC DIAGRAM AND VF BL CIRCUIT BOARD



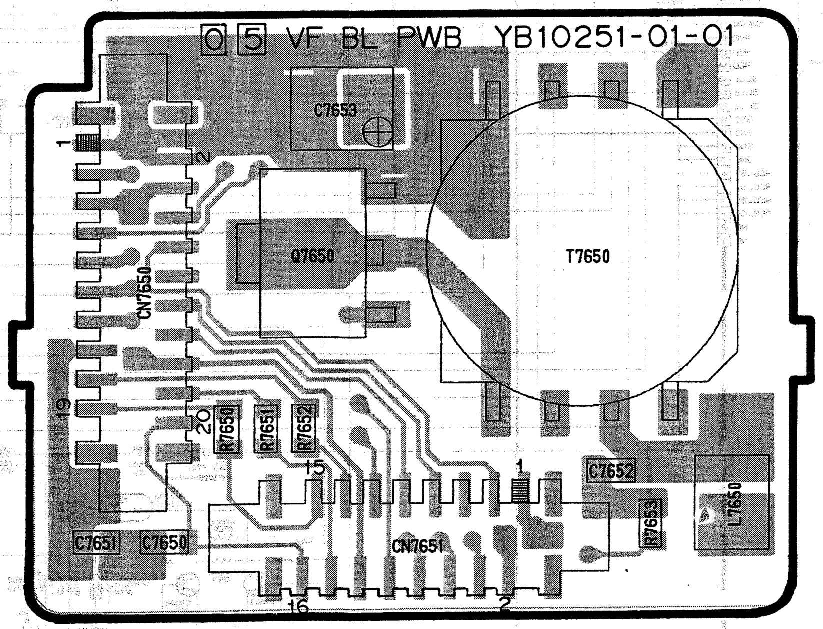
05 VF BL
CN7650
COM 20
GREEN 19
RED 18
BLUE 17
GND/VSS 16
VDD 15
M_HST 14
RGT 13
M_CLR 12
M_EN 11
NC 10
VCK2 9
M_VST 8
M_HCK1 7
M_HCK2 6
VF_5V 5
VF_5V 4
VF_ON 3
GND 2
GND 1
TO VF MAIN
CN1006
(Page 4-29)
C7650
0.1
R7650 0Ω
R7651 0Ω
R7652 0Ω
C7651
0.1
TO VF_LCD
CN7651
16 COM
15 GREEN
14 RED
13 BLUE
12 BLACK
11 HCK1
10 HCK2
9 HST
8 RGT
7 CLR
6 EN
5 NC
4 VCK2
3 VST
2 VSS
1 VDD
L7650
10μ
BL7650
NLL0007-001
FDK
T7650
NQH0004-001X
7
1
5
4
Q7650
2SK2055
D
G
S
100K
C7652
0.1
C7653
22/16
R7653

FOIL SIDE (B)



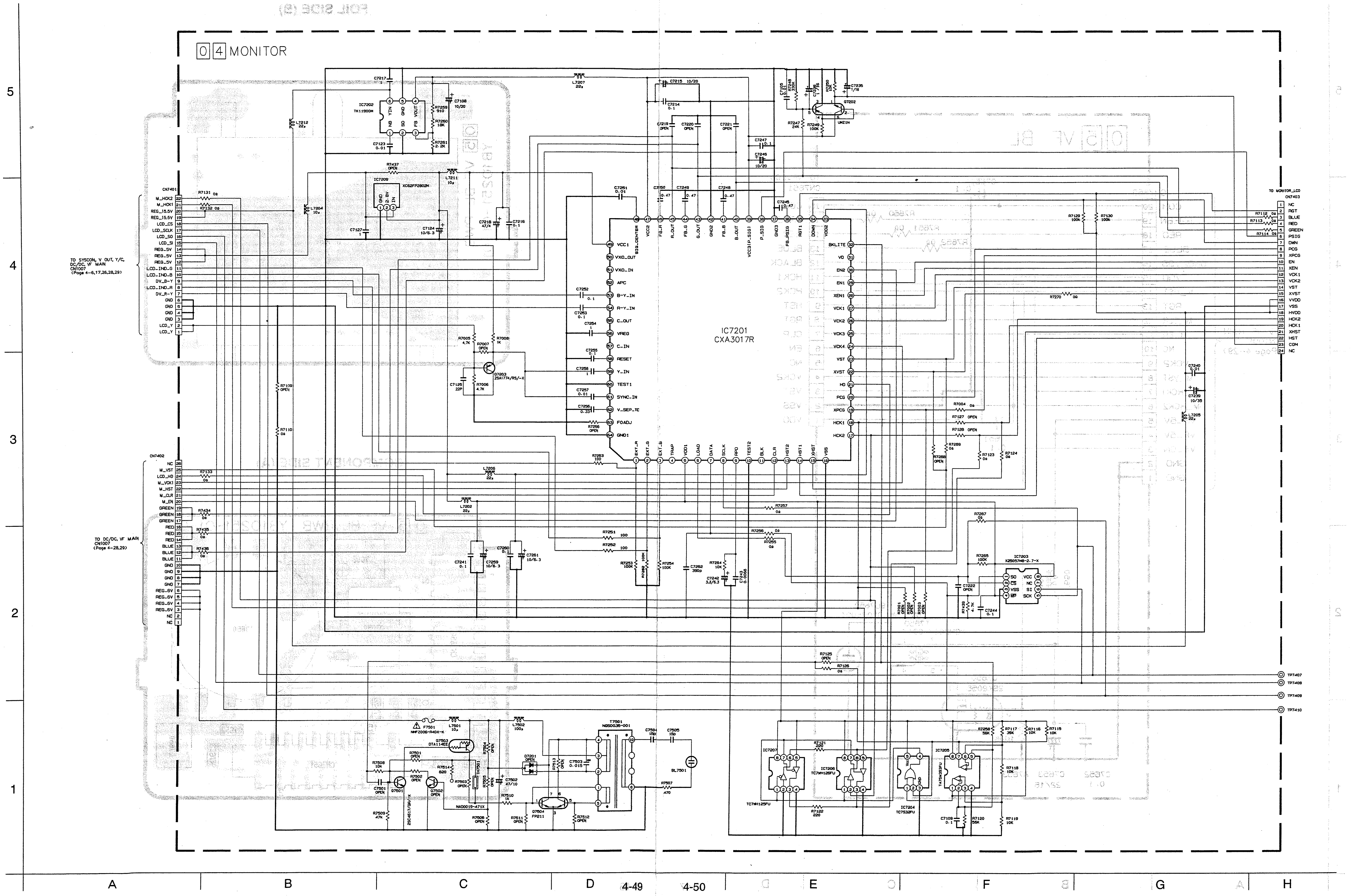
05 VF BL PWB
YB10251-01-01
BL7650

COMPONENT SIDE (A)



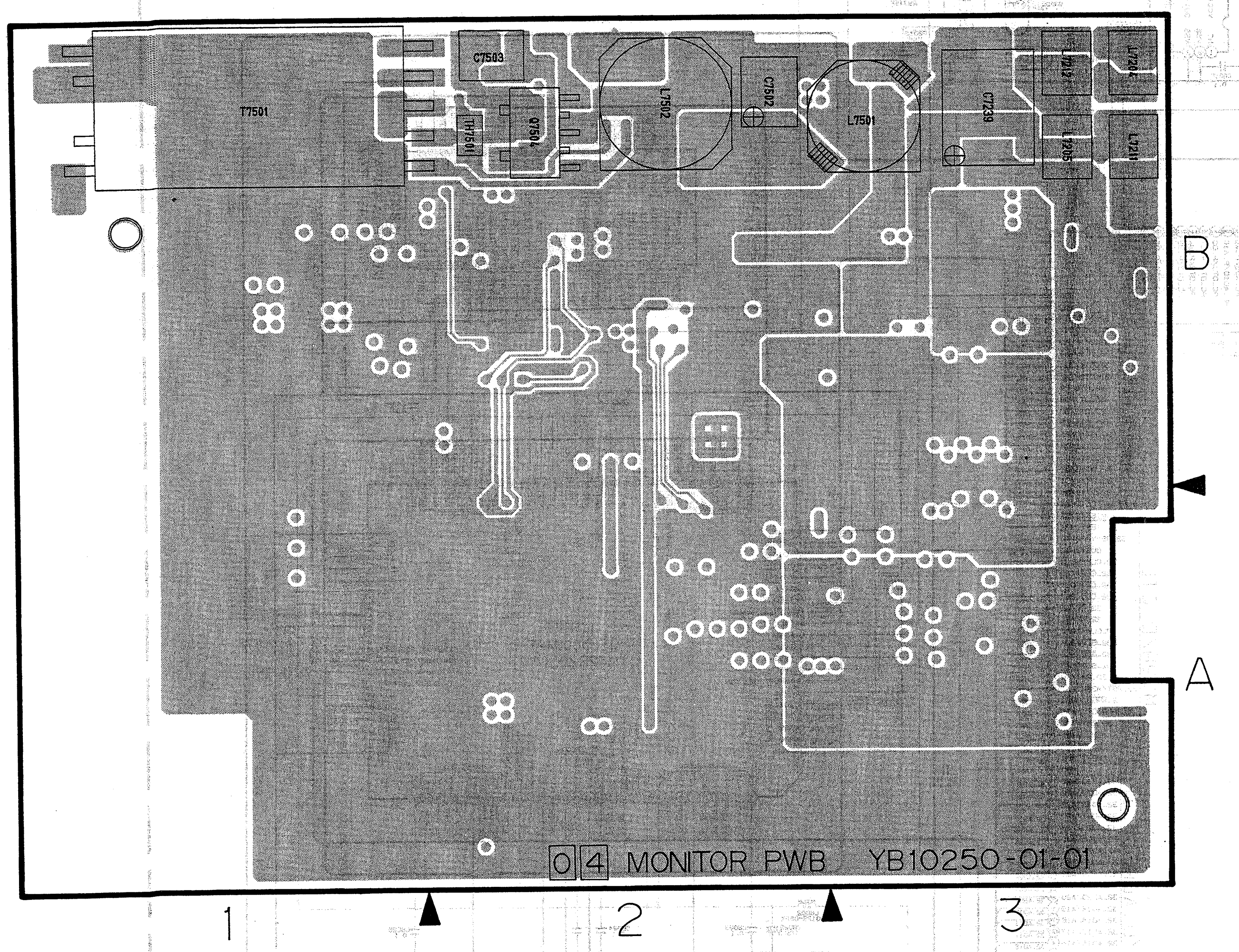
05 VF BL PWB YB10251-01-01
C7653
Q7650
T7650
CN7650
1
2
19
20
R7650
R7651
R7652
15
1
C7652
R7653
L7650
C7651
C7650
CN7651
16
2

4.25 MONITOR SCHEMATIC DIAGRAM

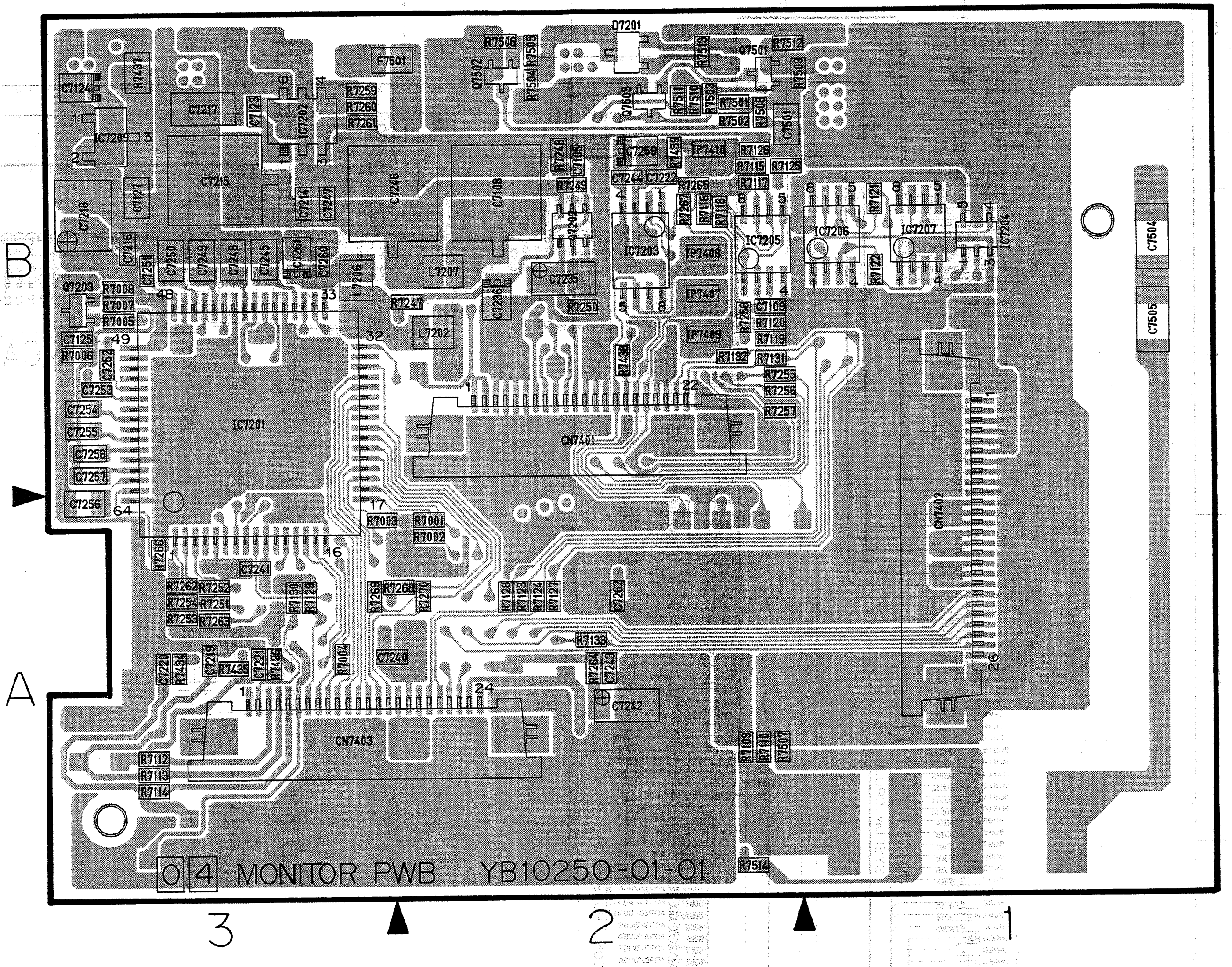

04 MONITOR
IC7201 CXA3017R
IC7202 TK11900M
IC7209 XC62FP2802M
IC7203 X25057MB-2.7-X
IC7207 TC7WH125FU
IC7206 TC7WH126FU
IC7204 TC7S32FU
IC7205 TA75W393FU
Q7203 2SA1774/R5/-X
Q7202 UM21N
Q7501 2SC4617/QR/-X
Q7503 DTA114EE
Q7504 FP211
T7501 N050035-001
F7501 MHF2006-R40X-K
BL7501
CN7401
TO SYSCON, V OUT, Y/C, DC/DC, VF MAIN CN1007 (Page 4-6,17,26,28,29)
CN7402
TO DC/DC, VF MAIN CN1007 (Page 4-28,29)
TO MONITOR_LCD CN7403
NC
RGT
BLUE
RED
GREEN
PSIG
DWN
PCG
XPCG
EN
XEN
VCK1
VCK2
VST
XVST
VVDD
VSS
HVDD
HCK2
HCK1
XHST
HST
COM
NC
TP7407
TP7408
TP7409
TP7410
A
B
C
D
E
F
G
H
1
2
3
4
5

4.26 MONITOR CIRCUIT BOARD

FOIL SIDE (B)


T7501
L7502
L7501
C7502
C7503
C7239
L7204
L7205
L7211
L7212
B
A
04 MONITOR PWB YB10250-01-01
1
2
3

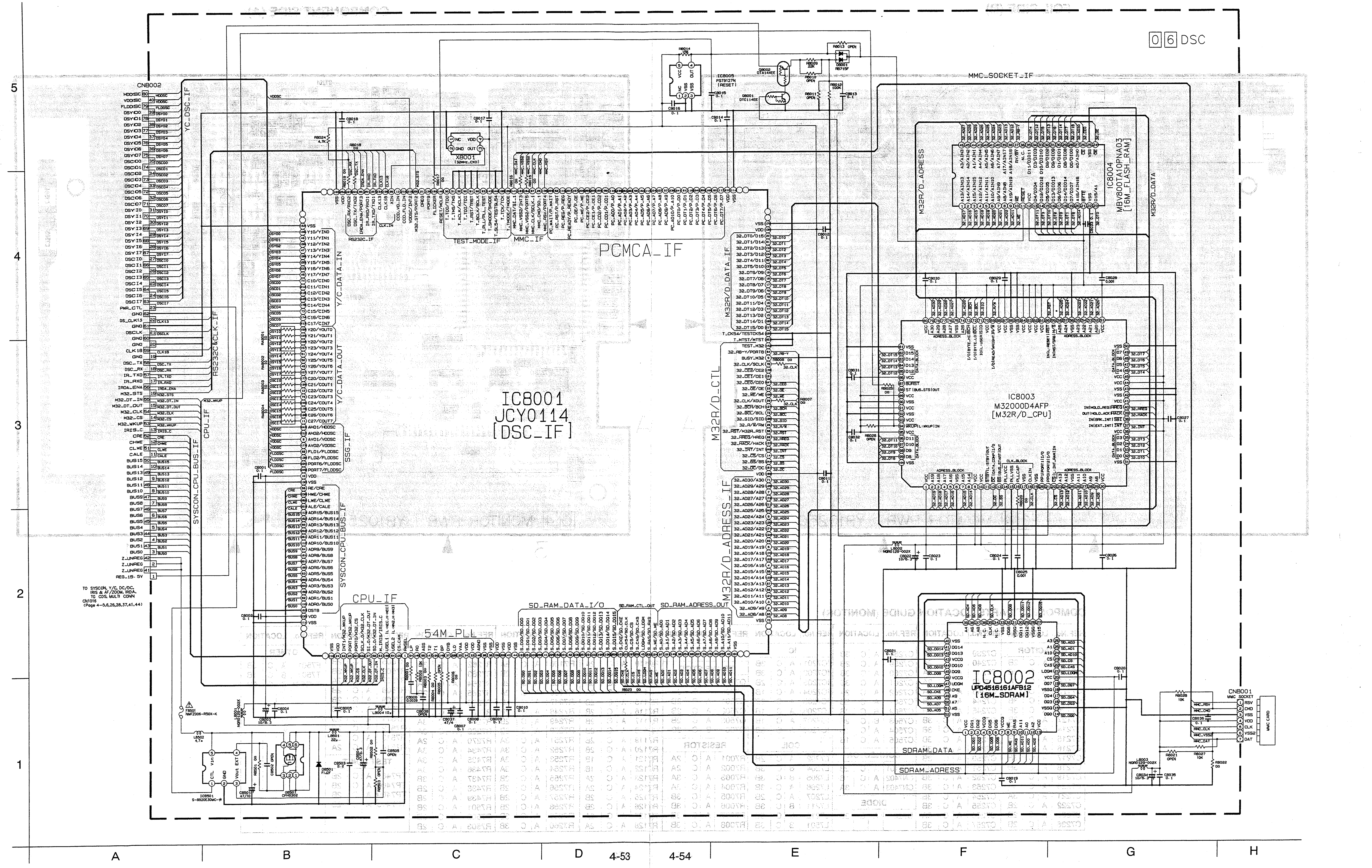
COMPONENT SIDE (A)


B
A
IC7201
IC7202
IC7203
IC7205
IC7206
IC7207
IC7209
CN7401
CN7402
CN7403
D7201
L7202
L7206
L7207
C7504
C7505
04 MONITOR PWB YB10250-01-01
3
2
1

COMPONENT PARTS LOCATION GUIDE (MONITOR)

REF.No.	LOCATION		
CAPACITOR			
C7105	A	C	2B
C7108	A	C	2B
C7109	A	C	2B
C7123	A	C	3B
C7124	A	C	3B
C7125	A	C	3B
C7127	A	C	3B
C7214	A	C	3B
C7215	A	C	3B
C7216	A	C	3B
C7217	A	C	3B
C7218	A	C	3B
C7219	A	C	3A
C7220	A	C	3A
C7221	A	C	3A
C7222	A	C	2B
C7235	A	C	2B
C7236	A	C	2B
C7239	B	C	3B
C7240	A	C	3A
C7241	A	C	3A
C7242	A	C	2A
C7243	A	C	2A
C7244	A	C	2B
C7245	A	C	3B
C7246	A	C	3B
C7247	A	C	3B
C7248	A	C	3B
C7249	A	C	3B
C7250	A	C	3B
C7251	A	C	3B
C7252	A	C	3B
C7253	A	C	3B
C7254	A	C	3B
C7255	A	C	3B
C7256	A	C	3A
C7257	A	C	3B
C7258	A	C	3B
C7259	A	C	2B
C7260	A	C	3B
C7261	A	C	3B
C7262	A	C	2A
C7501	A	C	2B
C7502	B	C	2B
C7503	B	C	2B
C7504	A	C	1B
C7505	A	C	1B
CONNECTOR			
CN7401	A	C	2B
CN7402	A	C	1B
CN7403	A	C	3A
DIODE			
D7201	A	C	2B
IC			
IC7201	A	C	3B
IC7202	A	C	3B
IC7203	A	C	2B
IC7204	A	C	1B
IC7205	A	C	2B
IC7206	A	C	1B
IC7207	A	C	1B
IC7209	A	C	3B
COIL			
L7202	A	C	2B
L7204	B	C	3B
L7205	B	C	3B
L7206	A	C	3B
L7207	A	C	2B
L7211	B	C	3B
L7212	B	C	3B
L7501	B	C	3B
L7502	B	C	2B
TRANSISTOR			
Q7202	A	C	2B
Q7203	A	C	3B
Q7501	A	C	2B
Q7502	A	C	2B
Q7503	A	C	2B
Q7504	B	C	2B
RESISTOR			
R7001	A	C	2A
R7002	A	C	2A
R7003	A	C	3A
R7004	A	C	3A
R7005	A	C	3B
R7006	A	C	3B
R7007	A	C	3B
R7008	A	C	3B
R7109	A	C	2A
R7110	A	C	2A
R7112	A	C	3A
R7113	A	C	3A
R7114	A	C	3A
R7115	A	C	2B
R7116	A	C	2B
R7117	A	C	2B
R7118	A	C	2B
R7119	A	C	2B
R7120	A	C	2B
R7121	A	C	1B
R7122	A	C	1B
R7123	A	C	2A
R7124	A	C	2A
R7125	A	C	2B
R7126	A	C	2B
R7127	A	C	2A
R7128	A	C	2A
R7129	A	C	3A
R7130	A	C	3A
R7131	A	C	2B
R7132	A	C	2B
R7133	A	C	2A
R7247	A	C	2B
R7248	A	C	2B
R7249	A	C	2B
R7250	A	C	2B
R7251	A	C	3A
R7252	A	C	3A
R7253	A	C	3A
R7254	A	C	3A
R7255	A	C	2B
R7256	A	C	2B
R7257	A	C	2B
R7258	A	C	2B
R7259	A	C	3B
R7260	A	C	3B
R7261	A	C	3B
R7262	A	C	3A
R7263	A	C	3A
R7264	A	C	2A
R7265	A	C	2B
R7266	A	C	3A
R7267	A	C	2B
R7268	A	C	3A
R7269	A	C	3A
R7270	A	C	2A
R7434	A	C	3A
R7435	A	C	3A
R7436	A	C	3A
R7437	A	C	3B
R7438	A	C	2B
R7439	A	C	2B
R7501	A	C	2B
R7502	A	C	2B
R7503	A	C	2B
R7504	A	C	2B
R7505	A	C	2B
R7506	A	C	2B
R7507	A	C	2A
R7508	A	C	2B
R7509	A	C	2B
R7510	A	C	2B
R7511	A	C	2B
R7512	A	C	2B
R7513	A	C	2B
R7514	A	C	2A
TEST POINT			
TP7407	A	C	2B
TP7408	A	C	2B
TP7409	A	C	2B
TP7410	A	C	2B
OTHER			
F7501	A	C	3B
T7501	B	C	1B
TH7501	B	C	2B

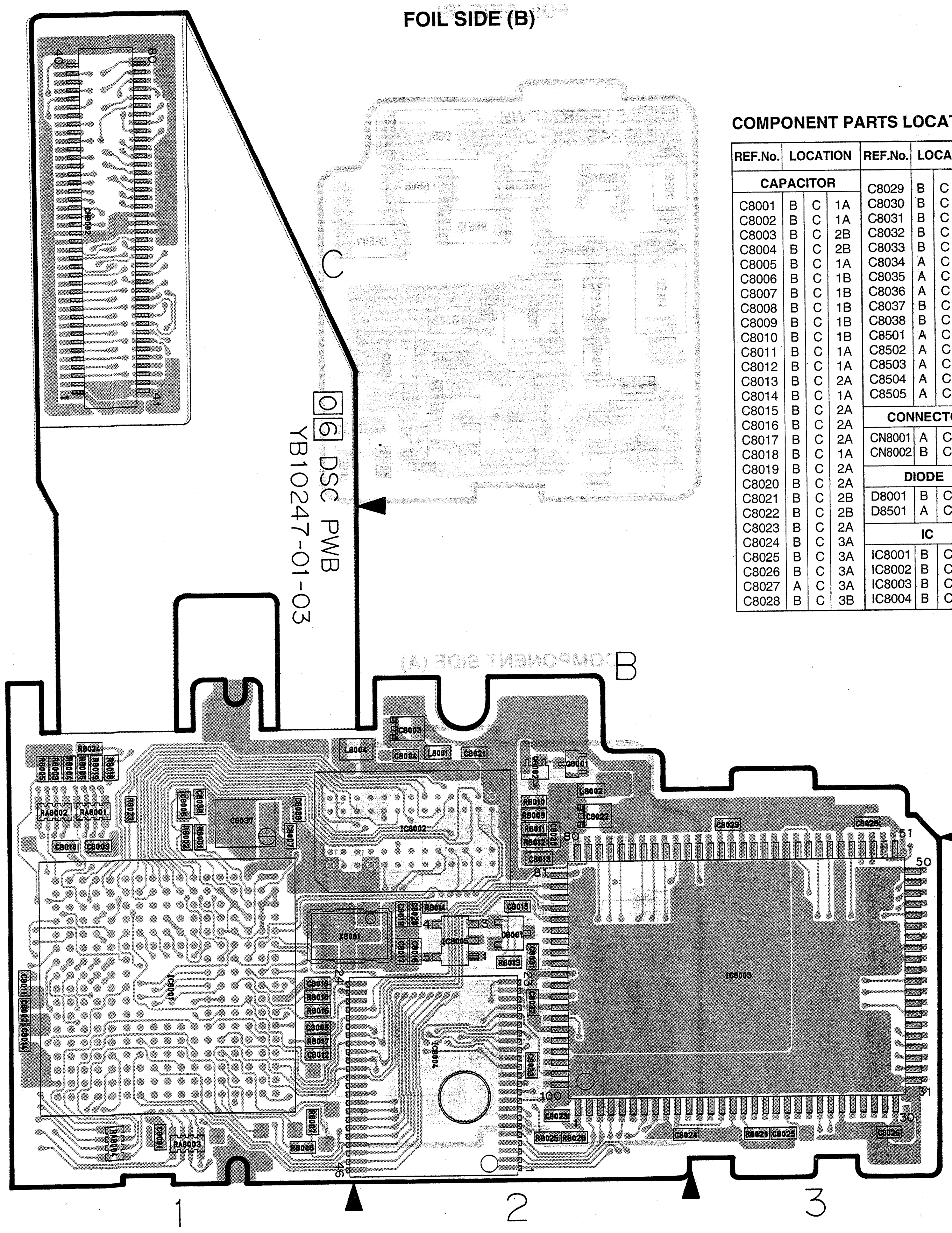
4.27 DSC SCHEMATIC DIAGRAM



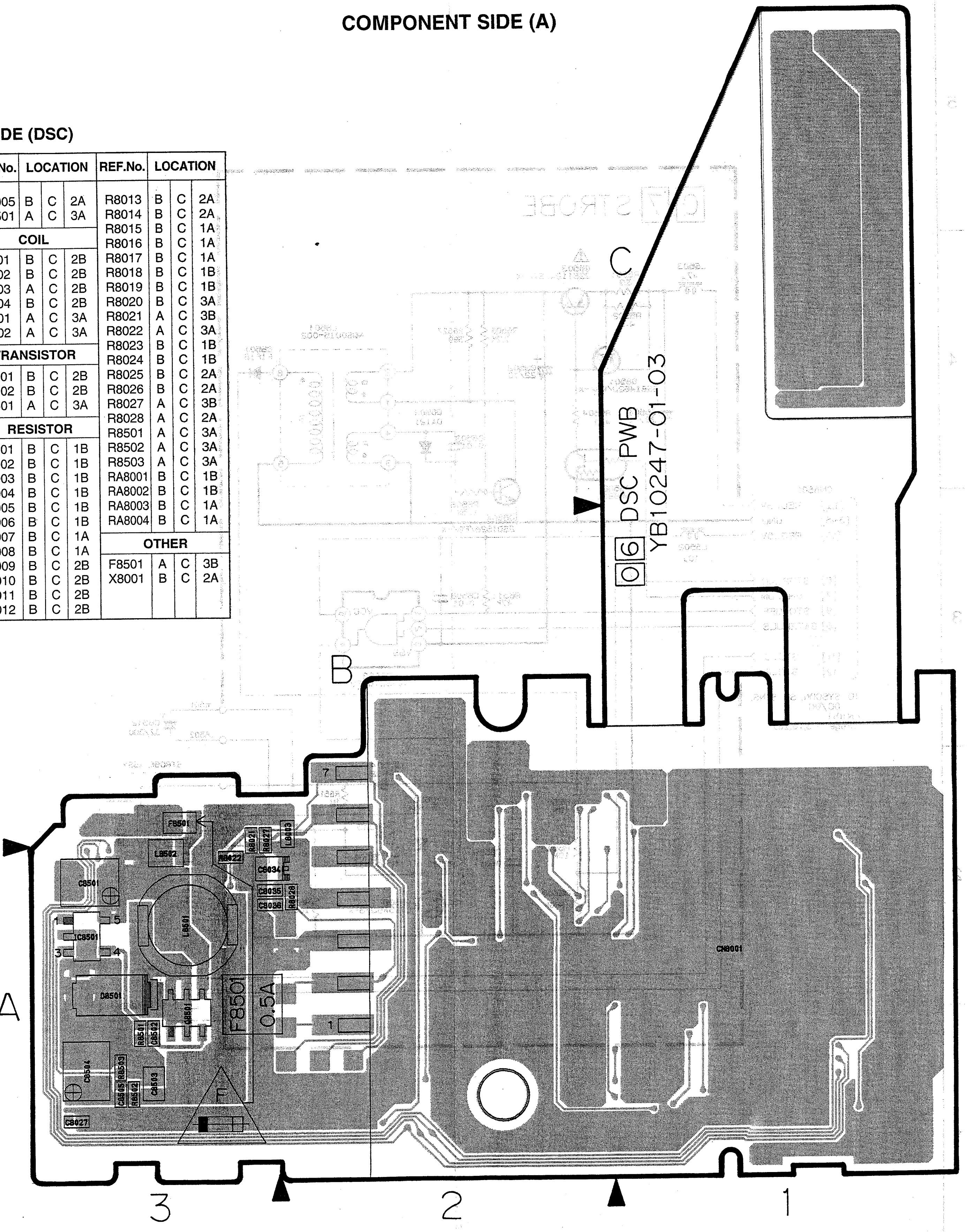
06 DSC
CN8002
YC_DSC_IF
RS232C&CLK_IF
CPU_IF
SYSCON_CPU_BUS_IF
Y/C_DATA_IN
Y/C_DATA_OUT
SSG_IF
SYSCON_CPU_BUS_IF
CPU_IF
54M_PLL
SD_RAM_DATA_I/O
SD_RAM_CTL_OUT
SD_RAM_ADRESS_OUT
RS232C_IF
TEST_MODE_IF
MMC_IF
PCMCA_IF
M32R/D_DATA_IF
M32R/D_CTL
M32R/D_ADRESS_IF
IC8001
JCY0114
[DSC_IF]
X8001
[32MHz_OXO]
IC8005
PST9127H
[RESET]
Q8002
DTA144EE
Q8001
DTC114EE
D8001
RB715F
MMC_SOCKET_IF
M32R/D_ADRESS
M32R/D_DATA
IC8004
MBV800TA10PNA03
[16M_FLASH_RAM]
IC8003
M32000D4AFP
[M32R/D_CPU]
ADRESS_BLOCK
DATA_BLOCK
IC8002
UPD4516161AFB12
[16M_SDRAM]
SDRAM_DATA
SDRAM_ADRESS
CNB001
MMC SOCKET
MMC CARD
IC8501
S-8520E30MC-A
L8501
D8501
F8501
NMF2006-R50X-K
TO SYSCON, Y/C, DC/DC, IRIS & AF/ZOOM, IRDA, TG CDS, MULTI CONN
CN1016
(Page 4-5,6,26,28,37,41,44)
HDDSC
VDDSC
FLDDSC
PWR_CTL
DSCLK
CLK18
DSC_TX
DSC_RX
IR_TXD
IR_RXD
IRDA_ENA
M32_STS
M32_DT_IN
M32_DT_OUT
M32_CLK
M32_CS
M32_WKUP
IRIS_C
CRE
CHWE
CLWE
CALE
Z_UNREG
REG_15.5V
1
2
3
4
5
A
B
C
D
E
F
G
H

4.28 DSC CIRCUIT BOARD

FOIL SIDE (B)


C
B
A
06 DSC PWB
YB10247-01-03
40
80
41
CN8002
1
2
3
R8024
R8005
R8004
R8003
R8002
R8001
R8023
RA8002
RA8001
C8038
C8008
C8037
C8018
C8017
C8010
C8009
IC8002
L8004
C8003
C8004
L8001
C8021
Q8002
Q8001
L8002
R8010
R8009
R8011
R8012
C8030
C8013
C8022
C8029
C8028
IC8003
X8001
IC8001
C8019
C8020
R8014
IC8005
C8015
D8001
R8013
C8031
C8016
R8015
R8016
C8005
R8017
C8012
C8032
C8033
C8011
C8002
C8014
IC8004
C8023
R8007
R8008
C8001
RA8004
RA8003
R8025
R8026
C8024
R8026
C8025
C8026
51
50
81
80
31
30
100
24
25
46
1

COMPONENT SIDE (A)


C
B
A
06 DSC PWB
YB10247-01-03
7
F8501
R8021
R8027
R8022
C8034
C8035
C8036
R8028
L8502
C8501
IC8501
L8501
5
1
3
4
D8501
Q8501
R8501
C8502
C8504
R8503
R8502
C8503
C8505
C8027
F8501
0.5A
F
CN8001
1
3
2
1

COMPONENT PARTS LOCATION GUIDE (DSC)

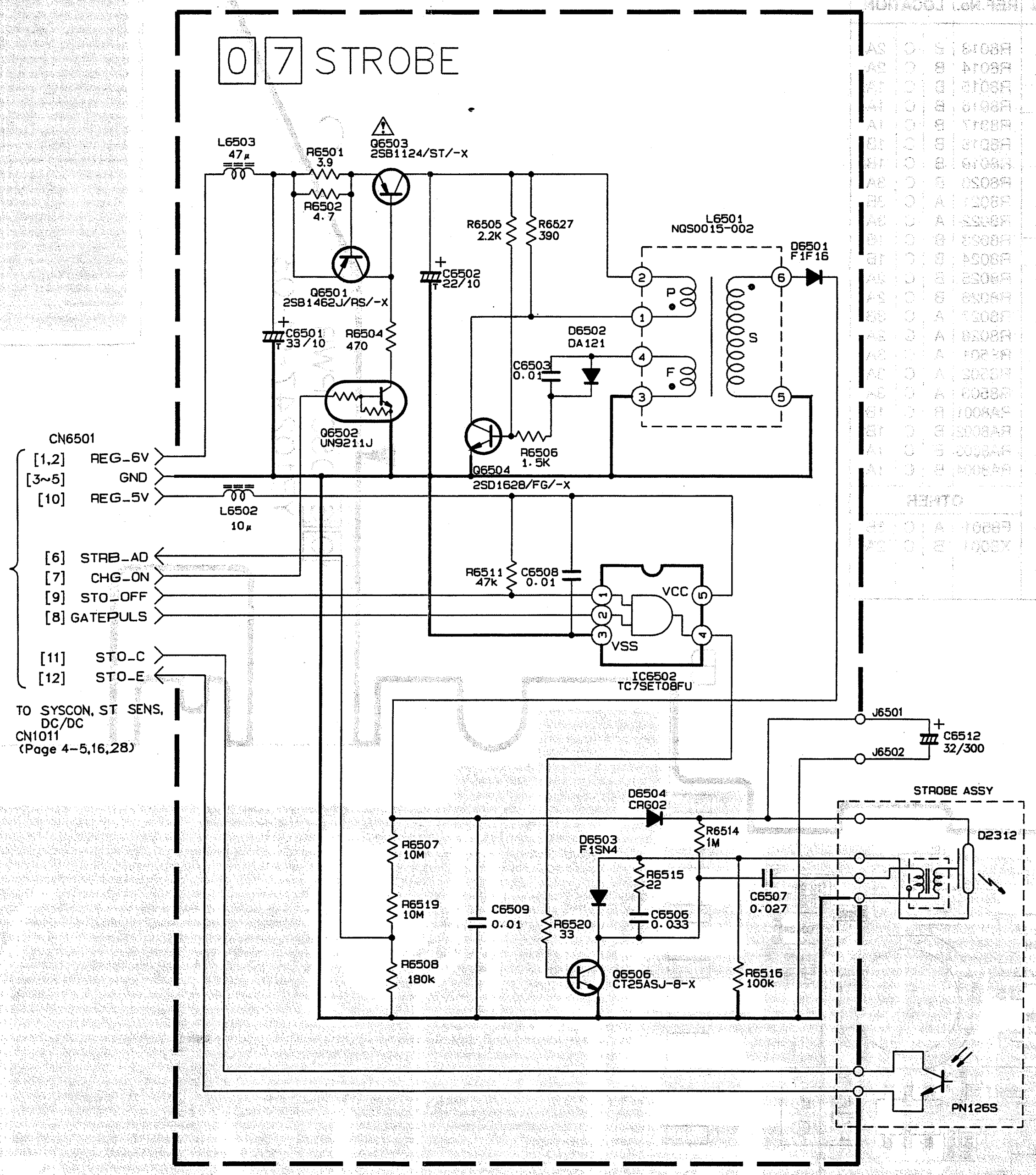
REF.No.	LOCATION		
CAPACITOR			
C8001	B	C	1A
C8002	B	C	1A
C8003	B	C	2B
C8004	B	C	2B
C8005	B	C	1A
C8006	B	C	1B
C8007	B	C	1B
C8008	B	C	1B
C8009	B	C	1B
C8010	B	C	1B
C8011	B	C	1A
C8012	B	C	1A
C8013	B	C	2A
C8014	B	C	1A
C8015	B	C	2A
C8016	B	C	2A
C8017	B	C	2A
C8018	B	C	1A
C8019	B	C	2A
C8020	B	C	2A
C8021	B	C	2B
C8022	B	C	2B
C8023	B	C	2A
C8024	B	C	3A
C8025	B	C	3A
C8026	B	C	3A
C8027	A	C	3A
C8028	B	C	3B

REF.No.	LOCATION		
C8029	B	C	3B
C8030	B	C	2B
C8031	B	C	2A
C8032	B	C	2A
C8033	B	C	2A
C8034	A	C	3A
C8035	A	C	3A
C8036	A	C	3A
C8037	B	C	1B
C8038	B	C	1B
C8501	A	C	3A
C8502	A	C	3A
C8503	A	C	3A
C8504	A	C	3A
C8505	A	C	3A
CONNECTOR			
CN8001	A	C	1A
CN8002	B	C	1C
DIODE			
D8001	B	C	2A
D8501	A	C	3A
IC			
IC8001	B	C	1A
IC8002	B	C	2B
IC8003	B	C	3A
IC8004	B	C	2A

REF.No.	LOCATION		
IC8005	B	C	2A
IC8501	A	C	3A
COIL			
L8001	B	C	2B
L8002	B	C	2B
L8003	A	C	2B
L8004	B	C	2B
L8501	A	C	3A
L8502	A	C	3A
TRANSISTOR			
Q8001	B	C	2B
Q8002	B	C	2B
Q8501	A	C	3A
RESISTOR			
R8001	B	C	1B
R8002	B	C	1B
R8003	B	C	1B
R8004	B	C	1B
R8005	B	C	1B
R8006	B	C	1B
R8007	B	C	1A
R8008	B	C	1A
R8009	B	C	2B
R8010	B	C	2B
R8011	B	C	2B
R8012	B	C	2B

REF.No.	LOCATION		
R8013	B	C	2A
R8014	B	C	2A
R8015	B	C	1A
R8016	B	C	1A
R8017	B	C	1A
R8018	B	C	1B
R8019	B	C	1B
R8020	B	C	3A
R8021	A	C	3B
R8022	A	C	3A
R8023	B	C	1B
R8024	B	C	1B
R8025	B	C	2A
R8026	B	C	2A
R8027	A	C	3B
R8028	A	C	2A
R8501	A	C	3A
R8502	A	C	3A
R8503	A	C	3A
RA8001	B	C	1B
RA8002	B	C	1B
RA8003	B	C	1A
RA8004	B	C	1A
OTHER			
F8501	A	C	3B
X8001	B	C	2A

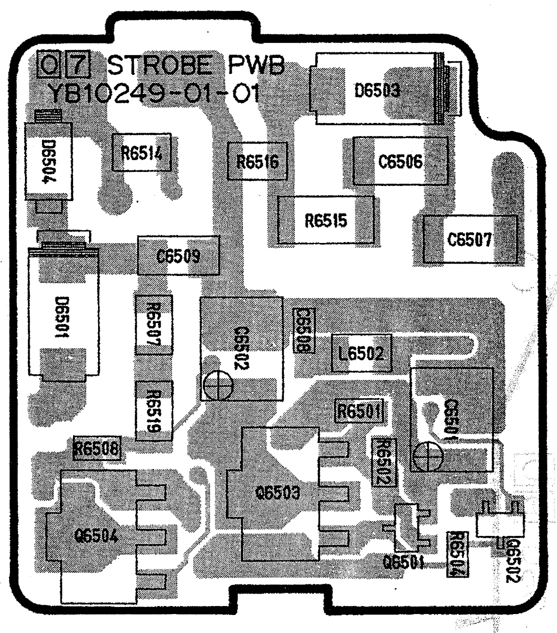
4.29 STROBE SCHEMATIC DIAGRAM AND STROBE CIRCUIT BOARD



07 STROBE
L6503 47μ
R6501 3.9
R6502 4.7
Q6503 2SB1124/ST/-X
Q6501 2SB1462J/RS/-X
C6501 33/10
R6504 470
Q6502 UN9211J
R6505 2.2K
R6527 390
C6502 22/10
L6501 NQS0015-002
D6501 F1F16
D6502 DA121
C6503 0.01
R6506 1.5K
Q6504 2SD1628/FG/-X
P
F
S
CN6501
[1,2] REG_6V
[3~5] GND
[10] REG_5V
L6502 10μ
[6] STRB_AD
[7] CHG_ON
[9] STO_OFF
[8] GATEPULS
[11] STO_C
[12] STO_E
TO SYSCON, ST SENS, DC/DC CN1011 (Page 4-5,16,28)
R6511 47k
C6508 0.01
VCC
VSS
IC6502 TC7SET08FU
J6501
J6502
C6512 32/300
STROBE ASSY
D6504 CRG02
R6514 1M
D6503 F1SN4
R6515 22
C6506 0.033
C6507 0.027
D2312
R6507 10M
R6519 10M
R6508 180k
C6509 0.01
R6520 33
Q6505 CT25ASJ-8-X
R6516 100k
PN126S

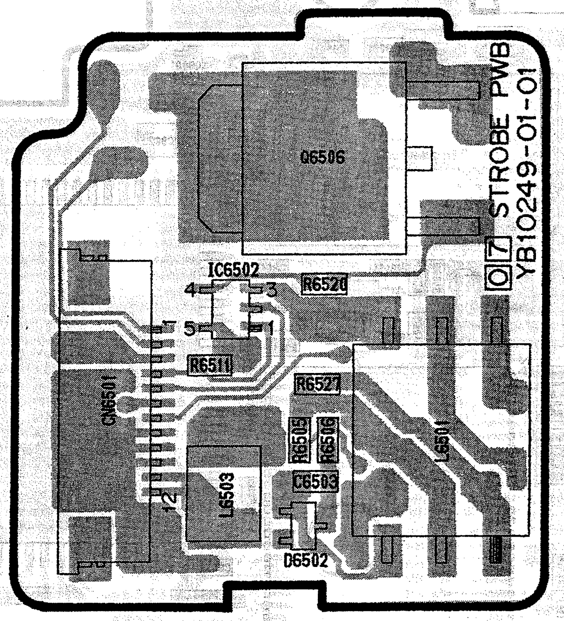
A
B
C
D
1
2
3
4
5

FOIL SIDE (B)



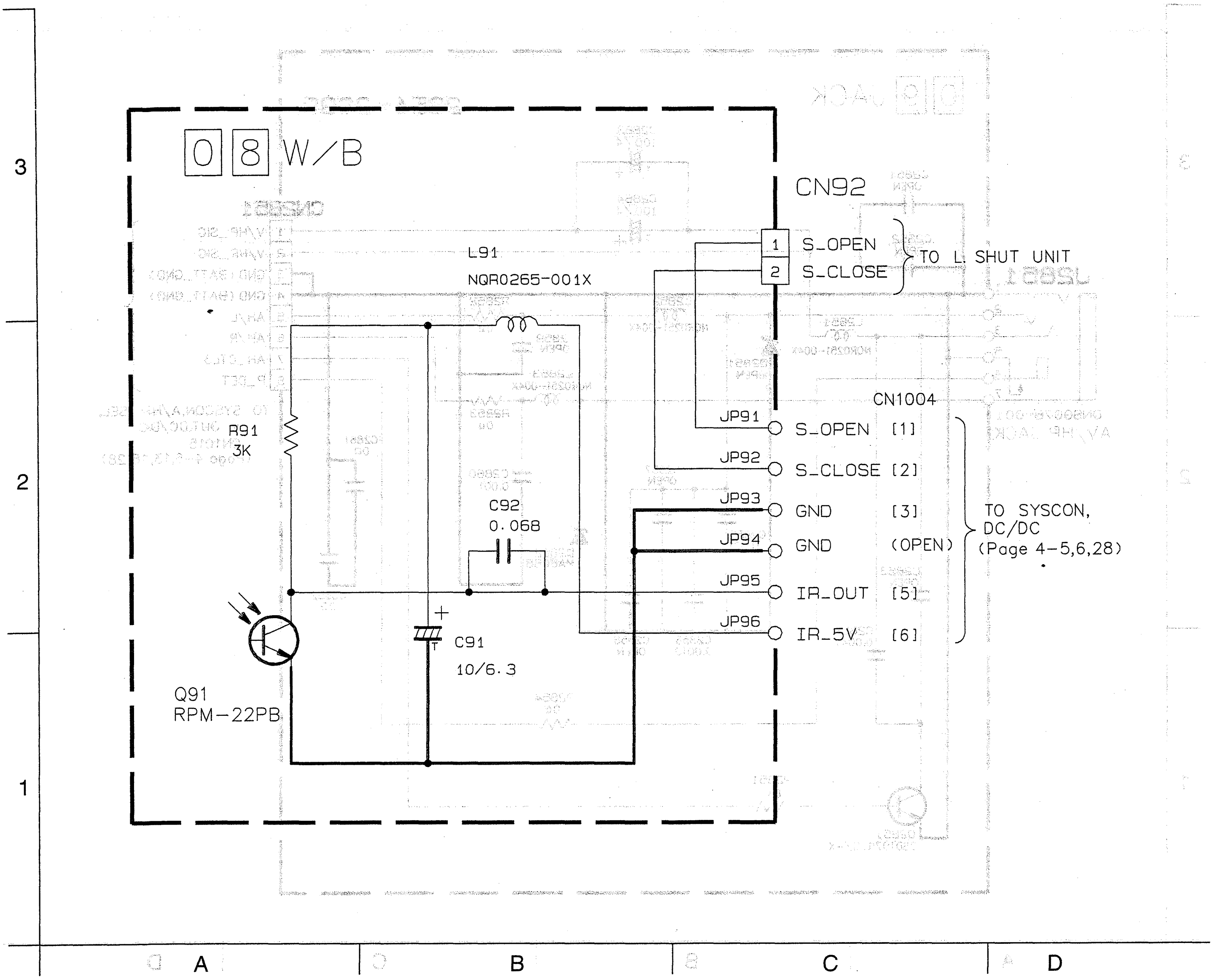
07 STROBE PWB
YB10249-01-01
D6503
D6504
R6514
R6516
C6506
R6515
C6507
C6509
D6501
R6507
C6502
C6508
L6502
R6519
R6501
C6501
R6508
R6502
Q6503
Q6504
Q6501
R6504
Q6502

COMPONENT SIDE (A)



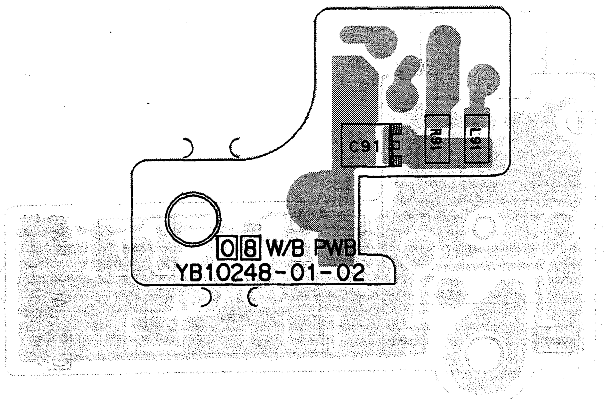
07 STROBE PWB
YB10249-01-01
Q6506
IC6502
4
3
5
R6520
R6511
R6527
CN6501
12
L6503
R6515
R6516
C6503
L6501
D6502

4.30 W/B SCHEMATIC DIAGRAM AND W/B CIRCUIT BOARD



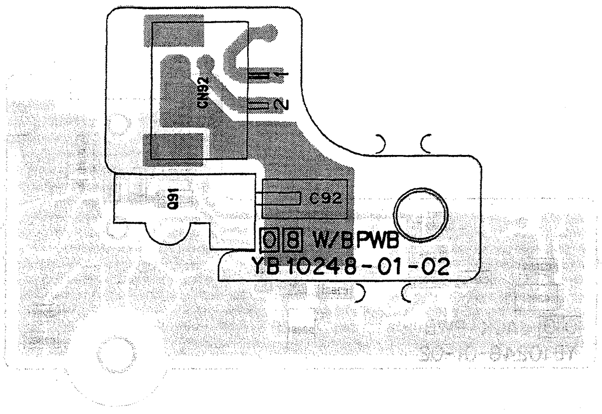
3
2
1
08 W/B
CN92
1
S_OPEN
2
S_CLOSE
TO L. SHUT UNIT
L91
NQR0265-001X
R91
3K
C92
0.068
+
C91
10/6.3
Q91
RPM-22PB
CN1004
JP91
S_OPEN [1]
JP92
S_CLOSE [2]
JP93
GND [3]
JP94
GND (OPEN)
JP95
IR_OUT [5]
JP96
IR_5V [6]
TO SYSCON, DC/DC (Page 4-5,6,28)
A
B
C
D

FOIL SIDE (B)



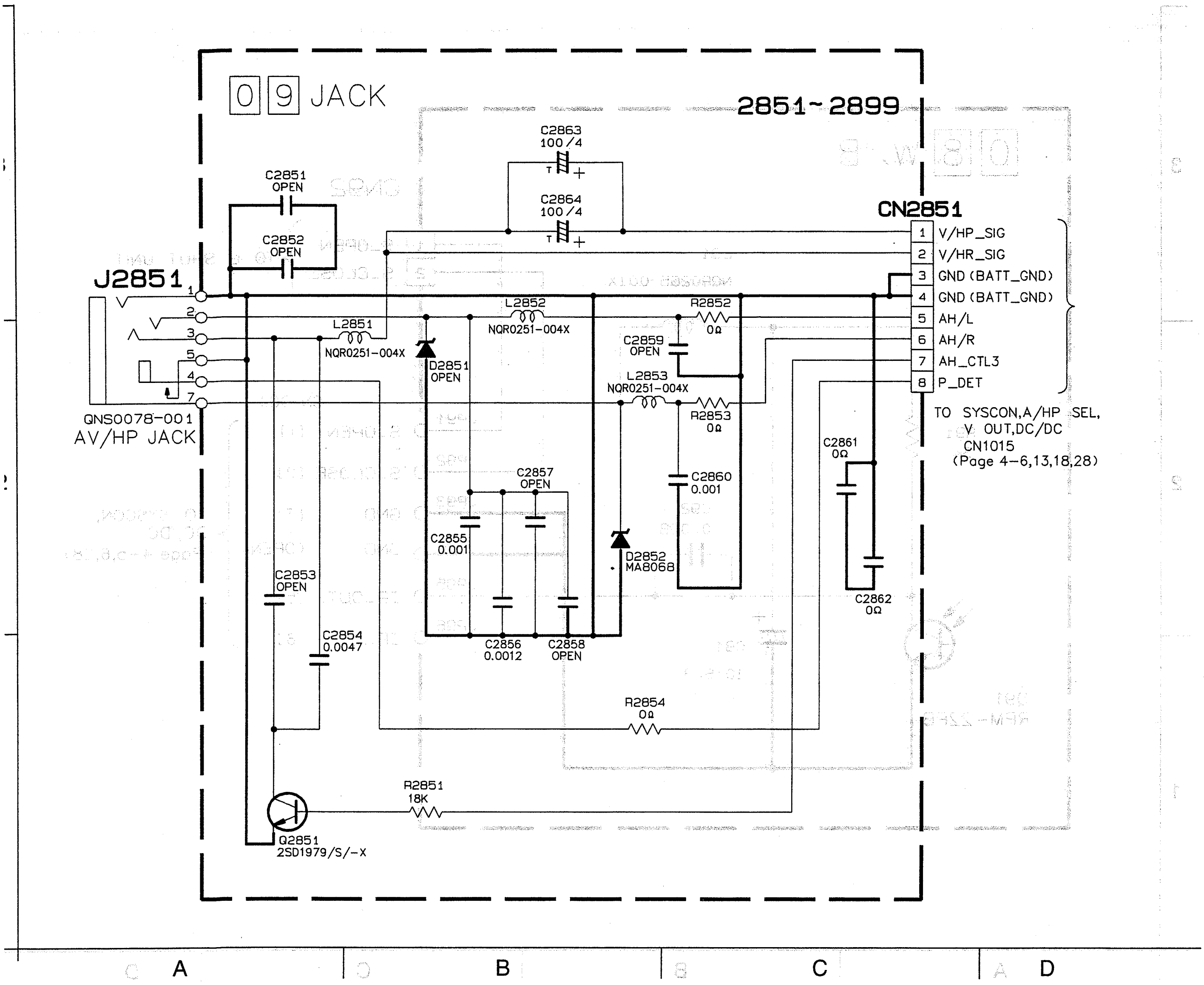
C91
R91
L91
08 W/B PWB
YB10248-01-02

COMPONENT SIDE (A)

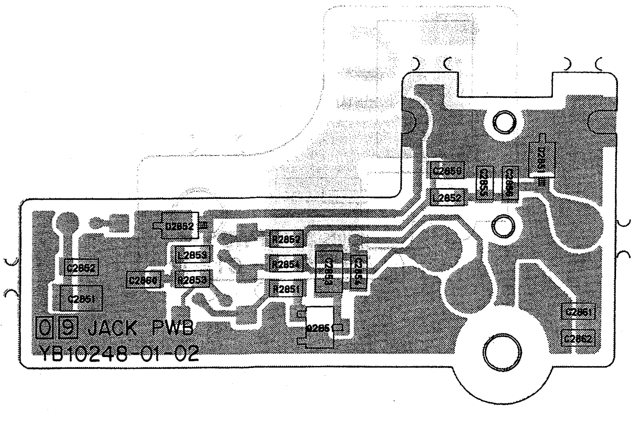


CN92
1
2
Q91
C92
08 W/BPWB
YB10248-01-02

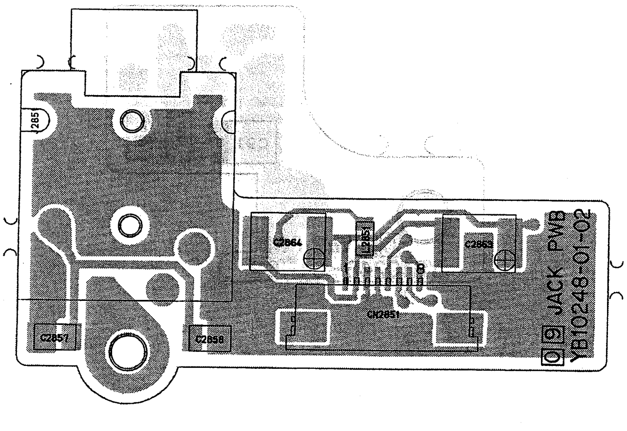
4.31 JACK SCHEMATIC DIAGRAM AND JACK CIRCUIT BOARD


0 9 JACK
2851~2899
C2863
100/4
C2864
100/4
C2851
OPEN
C2852
OPEN
J2851
1
2
3
5
4
7
QNS0078-001
AV/HP JACK
L2851
NQR0251-004X
L2852
NQR0251-004X
R2852
0Ω
C2859
OPEN
D2851
OPEN
L2853
NQR0251-004X
R2853
0Ω
C2860
0.001
C2857
OPEN
C2855
0.001
D2852
MA8068
C2853
OPEN
C2854
0.0047
C2856
0.0012
C2858
OPEN
C2861
0Ω
C2862
0Ω
R2854
0Ω
R2851
18K
Q2851
2SD1979/S/-X
CN2851
1 V/HP_SIG
2 V/HR_SIG
3 GND (BATT_GND)
4 GND (BATT_GND)
5 AH/L
6 AH/R
7 AH_CTL3
8 P_DET
TO SYSCON,A/HP SEL,
V OUT,DC/DC
CN1015
(Page 4-6,13,18,28)
A
B
C
D

FOIL SIDE (B)

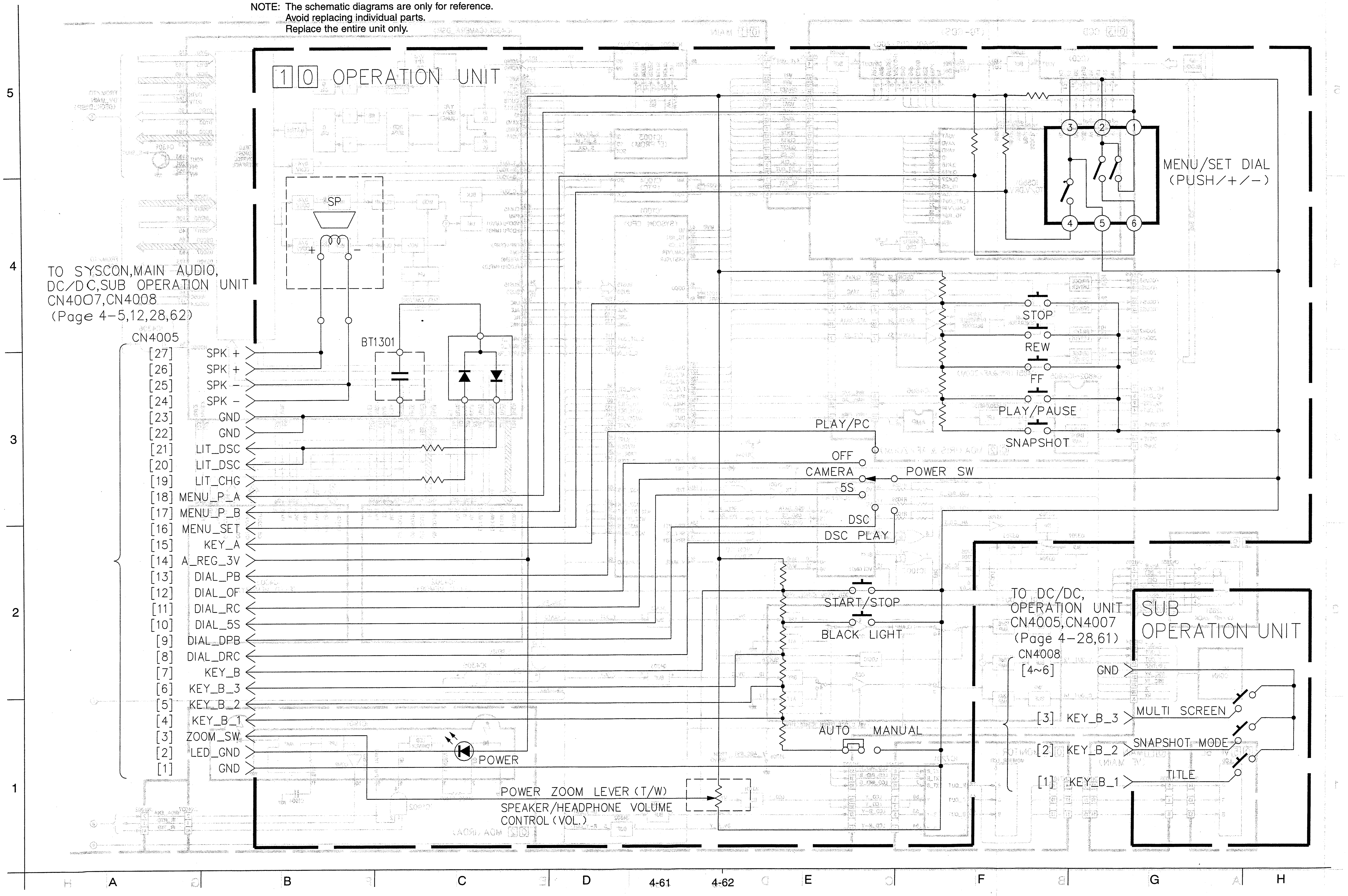

C2859
L2852
C2855
C2860
D2851
D2852
R2852
L2853
R2854
C2853
C2854
C2862
C2860
R2853
C2861
R2851
Q2851
C2861
C2862
0 9 JACK PWB
YB10248-01-02

COMPONENT SIDE (A)


285
C2864
L2851
C2863
CN2851
C2857
C2858
0 9 JACK PWB
YB10248-01-02

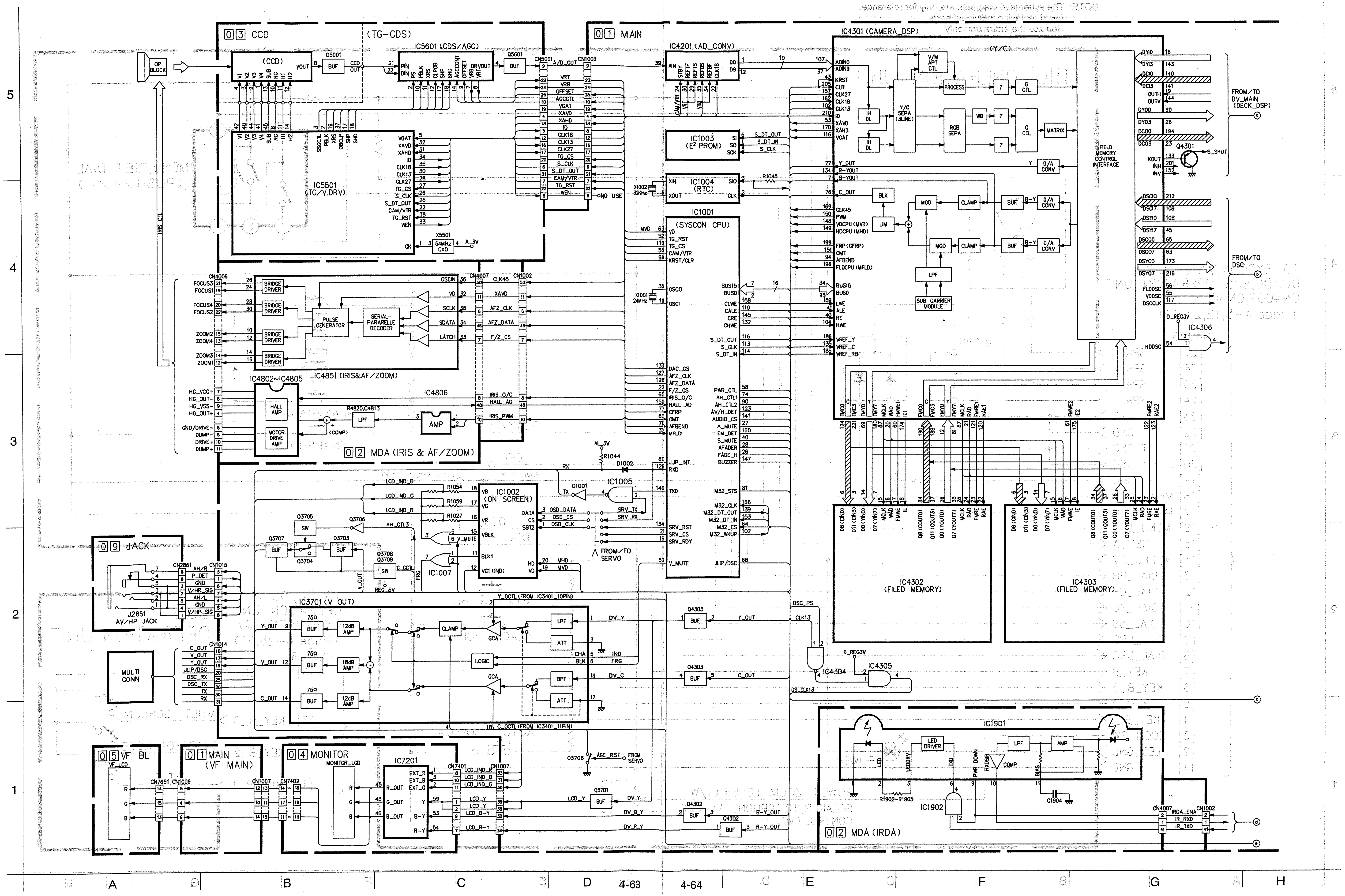
4.32 OPERATION UNIT AND SUB OPERATION UNIT SCHEMATIC DIAGRAMS

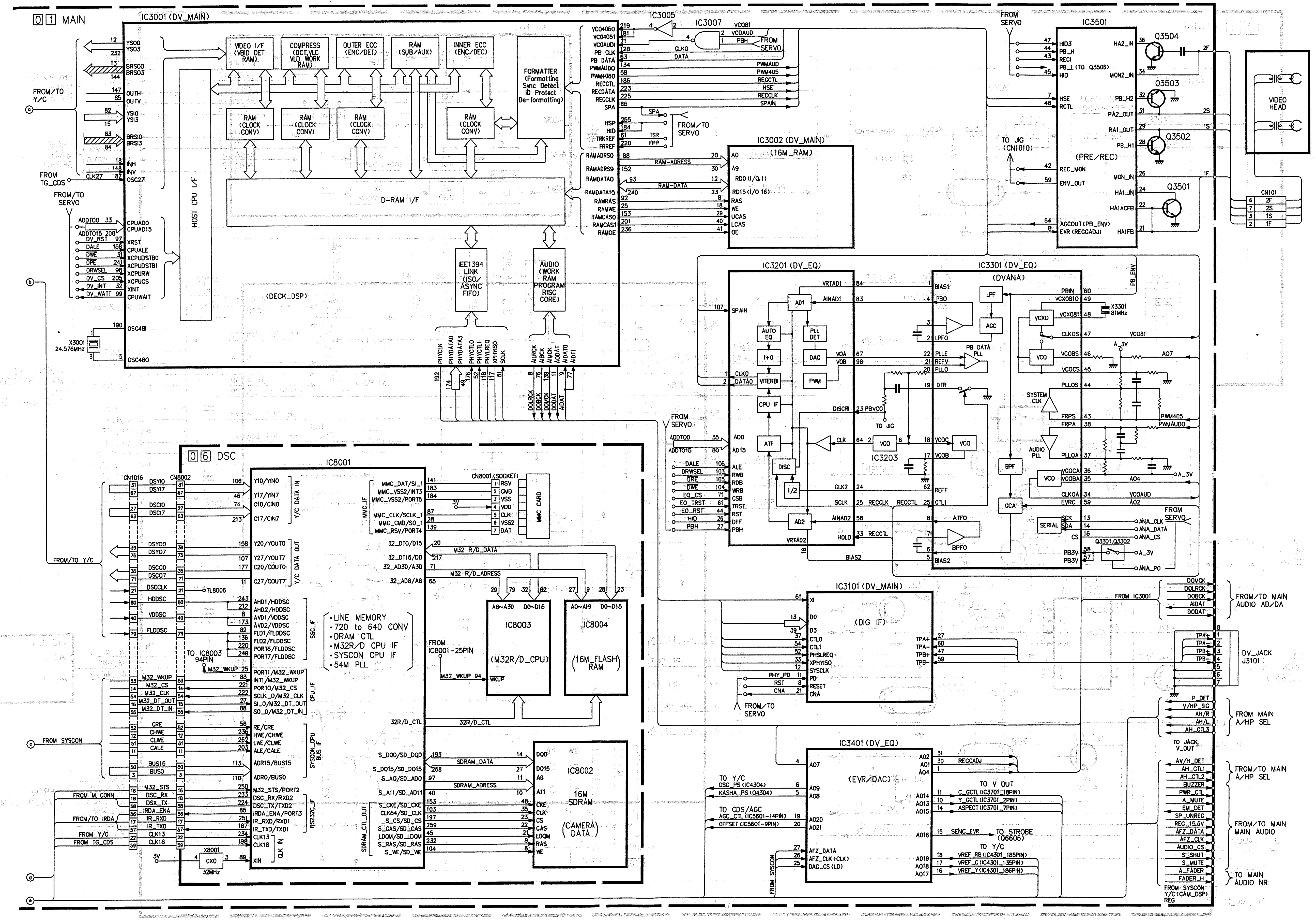
NOTE: The schematic diagrams are only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



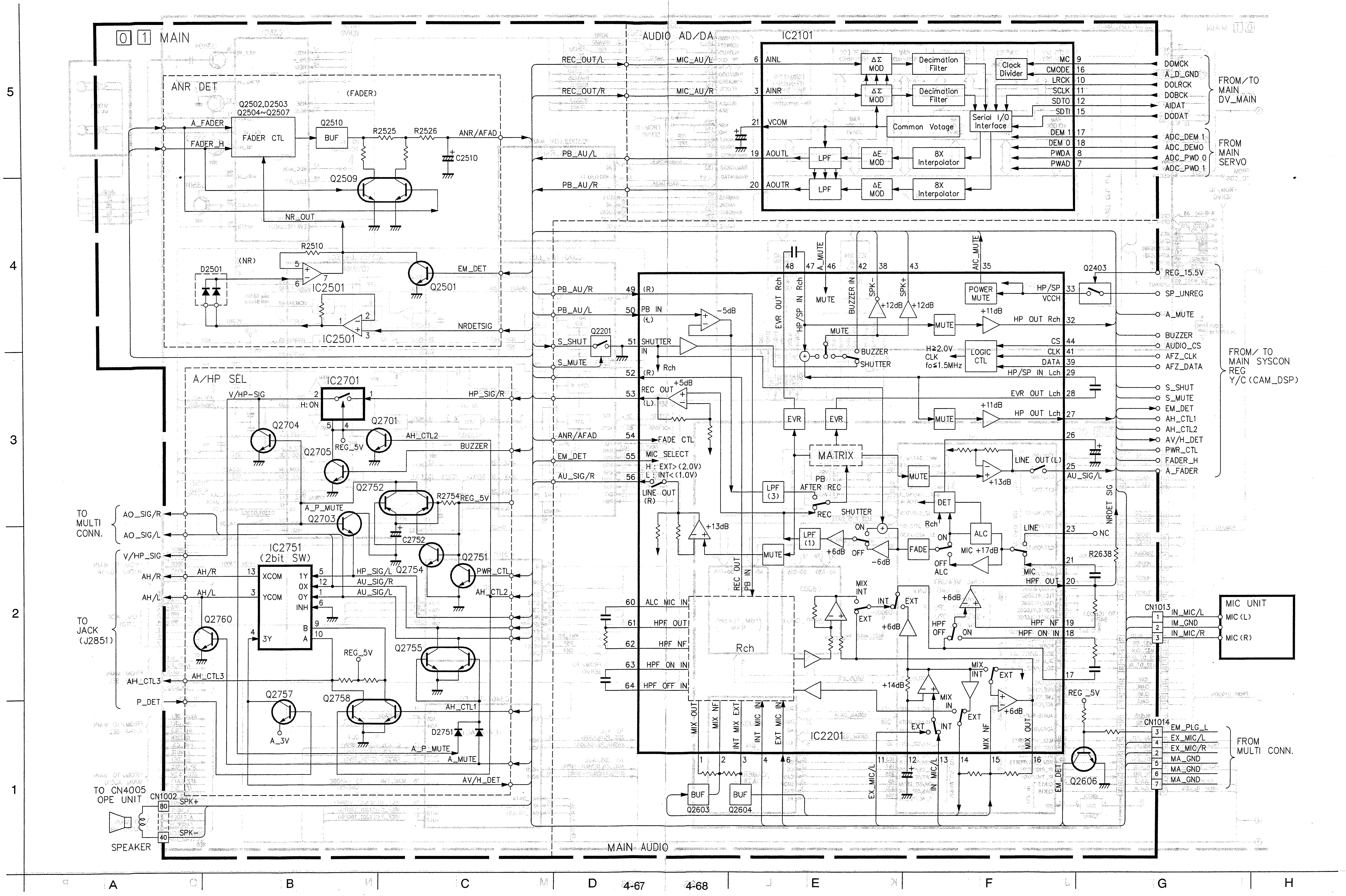
10 OPERATION UNIT
SP
BT1301
MENU/SET DIAL (PUSH/+/−)
3
2
1
4
5
6
TO SYSCON,MAIN AUDIO, DC/DC,SUB OPERATION UNIT CN4007,CN4008 (Page 4−5,12,28,62)
CN4005
[27] SPK +
[26] SPK +
[25] SPK −
[24] SPK −
[23] GND
[22] GND
[21] LIT_DSC
[20] LIT_DSC
[19] LIT_CHG
[18] MENU_P_A
[17] MENU_P_B
[16] MENU_SET
[15] KEY_A
[14] A_REG_3V
[13] DIAL_PB
[12] DIAL_OF
[11] DIAL_RC
[10] DIAL_5S
[9] DIAL_DPB
[8] DIAL_DRC
[7] KEY_B
[6] KEY_B_3
[5] KEY_B_2
[4] KEY_B_1
[3] ZOOM_SW
[2] LED_GND
[1] GND
STOP
REW
FF
PLAY/PAUSE
SNAPSHOT
PLAY/PC
OFF
CAMERA
5S
DSC
DSC PLAY
POWER SW
START/STOP
BLACK LIGHT
AUTO
MANUAL
POWER
POWER ZOOM LEVER (T/W)
SPEAKER/HEADPHONE VOLUME CONTROL (VOL.)
TO DC/DC, OPERATION UNIT CN4005,CN4007 (Page 4−28,61)
SUB OPERATION UNIT
CN4008
[4~6] GND
[3] KEY_B_3
[2] KEY_B_2
[1] KEY_B_1
MULTI SCREEN
SNAPSHOT MODE
TITLE
5
4
3
2
1
A
B
C
D
E
F
G
H

4.33 VIDEO SYSTEM BLOCK DIAGRAM

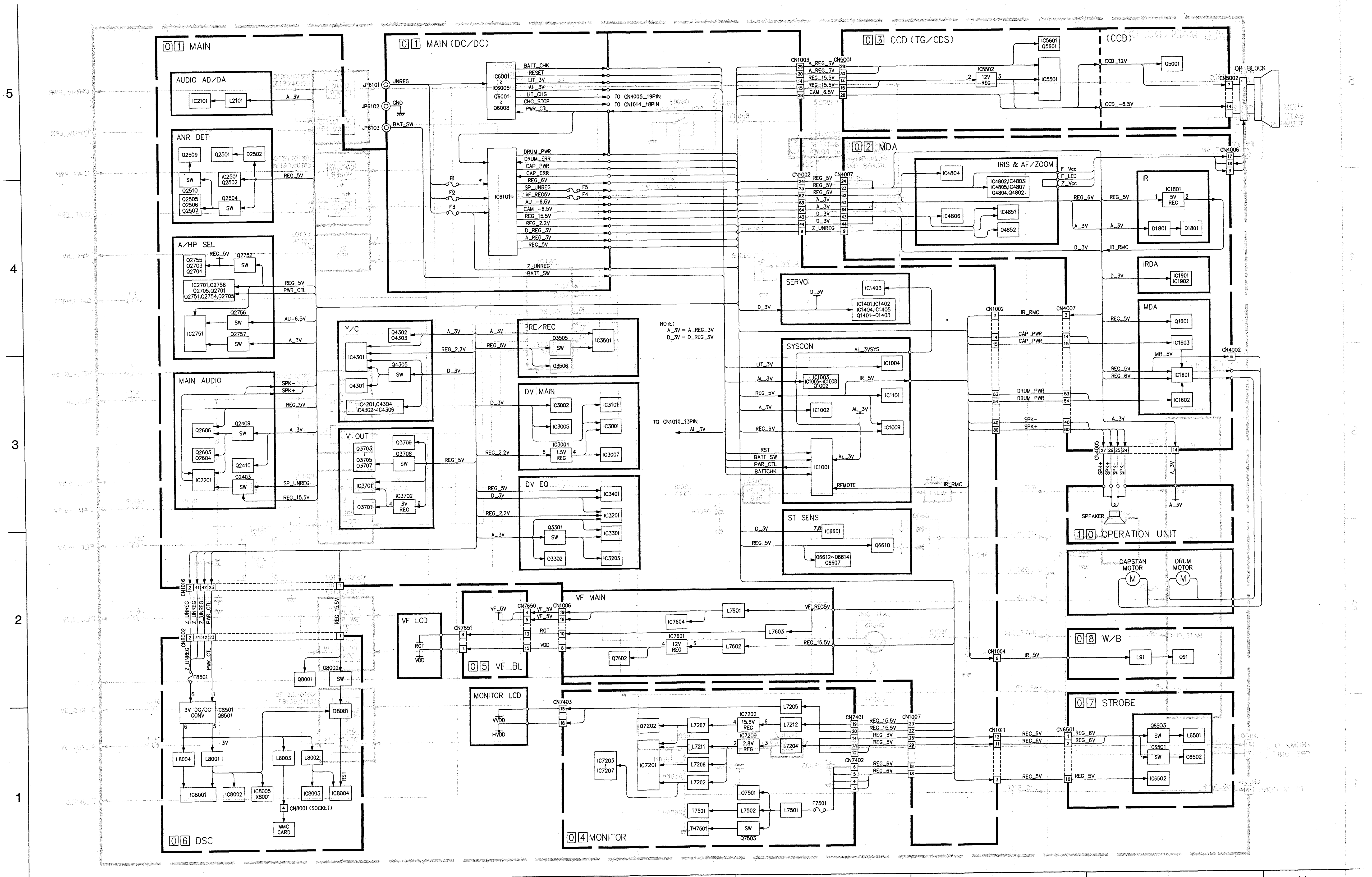

03 CCD
(TG-CDS)
OP BLOCK
(CCD)
Q5001
BUF
IC5601 (CDS/AGC)
Q5601
CN5001
CN1003
IC5501 (TG/V.DRV)
X5501 54MHz CXO
IRIS CTL
01 MAIN
IC4201 (AD_CONV)
IC1003 (E² PROM)
IC1004 (RTC)
X1002 32KHz
IC1001 (SYSCON CPU)
X1001 24MHz
IC4301 (CAMERA_DSP)
(Y/C)
Y/M APT CTL
PROCESS
G CTL
1H DL
Y/C SEPA (3LINE)
RGB SEPA
WB
MATRIX
D/A CONV
BLK
LIM
MOD
CLAMP
BUF
LPF
SUB CARRIER MODULE
FIELD MEMORY CONTROL INTERFACE
Q4301
S_SHUT
FROM/TO DV_MAIN (DECK_DSP)
FROM/TO DSC
IC4306
D_REG3V
CN4006
CN4007
CN1002
BRIDGE DRIVER
PULSE GENERATOR
SERIAL-PARARELLE DECODER
IC4851 (IRIS&AF/ZOOM)
IC4802~IC4805
HALL AMP
MOTOR DRIVE AMP
IC4806
R4820,C4813
LPF
AMP
(COMP)
02 MDA (IRIS & AF/ZOOM)
AL_3V
R1044
D1002
IC1005
Q1001
IC1002 (ON SCREEN)
R1054
R1059
R1027
Q3705
Q3706
Q3707
Q3703
Q3704
Q3708
Q3709
SW
REG_6V
IC1007
FROM/TO SERVO
IC4302 (FILED MEMORY)
IC4303 (FILED MEMORY)
09 JACK
CN2851
CN1015
J2851 AV/HP JACK
MULTI CONN
CN1014
IC3701 (V OUT)
75Ω
12dB AMP
18dB AMP
CLAMP
GCA
LOGIC
LPF
ATT
BPF
Y_GCTL (FROM IC3401_10PIN)
C_GCTL (FROM IC3401_11PIN)
Q4303
DSC_PS
CLK13
IC4304
IC4305
DS_CLK13
IC1901
LED DRIVER
PWR DOWN
RXDSIR
COMP
AMP
R1902~R1905
C1904
IC1902
CN4007
CN1002
IRDA_ENA
IR_RXD
IR_TXD
02 MDA (IRDA)
Q3706
AGC_RST
FROM SERVO
Q3701
Q4302
05 VF BL
VF_LCD
CN7651
CN1006
01 MAIN (VF MAIN)
CN1007
04 MONITOR
MONITOR_LCD
CN7402
IC7201
CN7401
CN1007
LCD_Y
DV_Y
DV_B_Y
DV_R_Y
1
2
3
4
5
A
B
C
D
E
F
G
H


01 MAIN
IC3001 (DV_MAIN)
VIDEO I/F (VBID DET RAM)
COMPRESS (DCT,VLC VLD WORK RAM)
OUTER ECC (ENC/DET)
RAM (SUB/AUX)
INNER ECC (ENC/DEC)
FORMATTER (Formatting Sync Detect ID Protect De-formatting)
RAM (CLOCK CONV)
HOST CPU I/F
D-RAM I/F
(DECK_DSP)
IEE1394 LINK (ISO/ASYNC FIFO)
AUDIO (WORK RAM PROGRAM RISC CORE)
FROM/TO Y/C
FROM TG_CDS
FROM/TO SERVO
X3001 24.576MHz
IC3005
IC3007
IC3002 (DV_MAIN) (16M_RAM)
IC3501
Q3504
Q3503
Q3502
Q3501
(PRE/REC)
VIDEO HEAD
CN101
TO JIG (CN1010)
IC3201 (DV_EQ)
IC3301 (DV_EQ) (DVANA)
IC3203
X3301 81MHz
SYSTEM CLK
AUDIO PLL
Q3301,Q3302
FROM SERVO
06 DSC
IC8001
Y/C DATA IN
Y/C DATA OUT
MMC_IF
SSG_IF
CPU_IF
SYSCON CPU BUS IF
RS232C_IF
SDRAM_CTL_OUT
CLK IN
CN8001 (SOCKET)
MMC CARD
•LINE MEMORY
•720 to 640 CONV
•DRAM CTL
•M32R/D CPU IF
•SYSCON CPU IF
•54M PLL
IC8003 (M32R/D_CPU)
IC8004 (16M_FLASH RAM)
IC8002 16M SDRAM (CAMERA DATA)
FROM IC8001-25PIN
TO IC8003 94PIN
X8001 32MHz
CN1016
CN8002
TL8006
FROM/TO Y/C
FROM SYSCON
FROM M_CONN
FROM/TO IRDA
FROM Y/C
FROM TG_CDS
IC3101 (DV_MAIN) (DIG IF)
FROM IC3001
FROM/TO MAIN AUDIO AD/DA
DV_JACK J3101
FROM MAIN A/HP SEL
TO JACK V_OUT
FROM/TO MAIN A/HP SEL
FROM/TO MAIN MAIN AUDIO
TO MAIN AUDIO NR
FROM SYSCON Y/C (CAM_DSP) REG
IC3401 (DV_EQ) (EVR/DAC)
TO Y/C
TO CDS/AGC
TO V OUT
TO STROBE (Q6605)
FROM SYSCON
FROM/TO SERVO

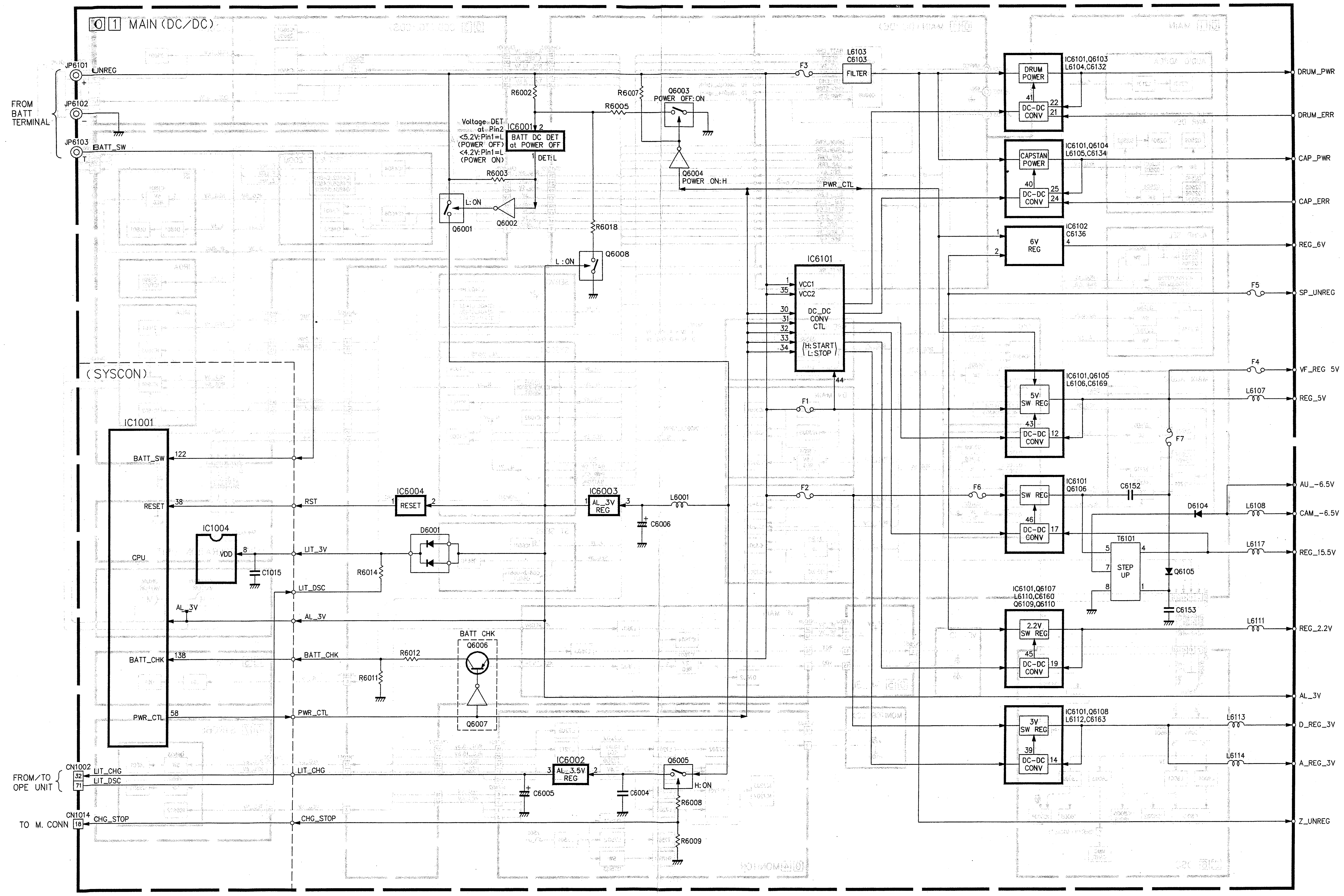
4.34 AUDIO BLOCK DIAGRAM


0 1 MAIN
AUDIO AD/DA
IC2101
REC_OUT/L
REC_OUT/R
MIC_AU/L
MIC_AU/R
AINL
AINR
VCOM
AOUTL
AOUTR
PB_AU/L
PB_AU/R
ΔΣ MOD
Decimation Filter
Clock Divider
Common Votage
Serial I/O Interface
LPF
ΔΣ MOD
8X Interpolator
MC
CMODE
LRCK
SCLK
SDTO
SDTI
DEM 1
DEM 0
PWDA
PWAD
DOMCK
A_D_GND
DOLRCK
DOBCK
AIDAT
DODAT
FROM/TO MAIN DV_MAIN
ADC_DEM 1
ADC_DEMO
ADC_PWD 0
ADC_PWD 1
FROM MAIN SERVO
ANR DET
(FADER)
Q2502,D2503
Q2504~Q2507
A_FADER
FADER_H
FADER CTL
Q2510
BUF
R2525
R2526
ANR/AFAD
C2510
Q2509
NR_OUT
R2510
(NR)
D2501
IC2501
Q2501
EM_DET
NRDETSIG
A/HP SEL
IC2701
V/HP-SIG
H:ON
HP_SIG/R
Q2704
Q2701
REG_5V
AH_CTL2
Q2705
BUZZER
Q2752
R2754
A_P_MUTE
Q2703
C2752
Q2751
Q2754
PWR_CTL
IC2751 (2bit SW)
XCOM
YCOM
3Y
1Y
0X
0Y
INH
B
A
HP_SIG/L
AU_SIG/R
AU_SIG/L
Q2760
Q2755
AH_CTL3
Q2757
Q2758
A_3V
AH_CTL1
D2751
A_MUTE
AV/H_DET
TO MULTI CONN.
AO_SIG/R
AO_SIG/L
V/HP_SIG
AH/R
AH/L
TO JACK (J2851)
P_DET
TO CN4005 OPE UNIT
CN1002
SPK+
SPK-
SPEAKER
PB_AU/R
PB_AU/L
S_SHUT
Q2201
S_MUTE
ANR/AFAD
EM_DET
AU_SIG/R
(R)
PB IN
(L)
-5dB
SHUTTER IN
Rch
REC OUT
+5dB
FADE CTL
MIC SELECT
H: EXT>(2.0V)
L: INT<(1.0V)
LINE OUT (R)
+13dB
EVR OUT Rch
HP/SP IN Rch
A_MUTE
BUZZER IN
SPK-
SPK+
MUTE
+12dB
AIC_MUTE
POWER MUTE
HP/SP VCCH
+11dB
HP OUT Rch
BUZZER
SHUTTER
H≧2.0V
CLK
fo≦1.5MHz
LOGIC CTL
CS
CLK
DATA
HP/SP IN Lch
EVR OUT Lch
HP OUT Lch
EVR
MATRIX
LPF (3)
PB
AFTER REC
REC
LINE OUT(L)
AU_SIG/L
DET
ON
OFF
LPF (1)
+6dB
-6dB
FADE
ALC
MIC +17dB
LINE
MIC
HPF OUT
MUTE
REC OUT
PB IN
MIX INT
EXT
INT
HPF OFF
HPF NF
HPF ON IN
ALC MIC IN
HPF OUT
HPF NF
HPF ON IN
HPF OFF IN
Rch
+14dB
MIX IN
MIX OUT
MIX NF
INT MIX EXT
INT MIC IN
EXT MIC IN
IC2201
MIX INT
+6dB
MIX NF
MIX OUT
EX_MIC/L
IN_MIC/L
EM_DET
BUF
Q2603
Q2604
Q2606
REG_5V
R2638
NRDET SIG
Q2403
REG_15.5V
SP_UNREG
A_MUTE
BUZZER
AUDIO_CS
AFZ_CLK
AFZ_DATA
S_SHUT
S_MUTE
EM_DET
AH_CTL1
AH_CTL2
AV/H_DET
PWR_CTL
FADER_H
A_FADER
FROM/ TO MAIN SYSCON REG Y/C (CAM_DSP)
NC
CN1013
IN_MIC/L
IM_GND
IN_MIC/R
MIC UNIT
MIC (L)
MIC (R)
CN1014
EM_PLG_L
EX_MIC/L
EX_MIC/R
MA_GND
MA_GND
MA_GND
FROM MULTI CONN.
MAIN AUDIO
5
4
3
2
1
A
B
C
D
E
F
G
H

4.35 POWER SYSTEM BLOCK DIAGRAM


01 MAIN
AUDIO AD/DA
IC2101
L2101
A_3V
ANR DET
Q2509
Q2501
D2502
SW
IC2501
Q2502
Q2510
Q2505
Q2506
Q2507
Q2504
REG_5V
A/HP SEL
Q2755
Q2703
Q2704
Q2752
IC2701,Q2758
Q2705,Q2701
Q2751,Q2754,Q2705
PWR_CTL
Q2756
IC2751
Q2757
AU_-6.5V
MAIN AUDIO
SPK-
SPK+
Q2606
Q2409
Q2603
Q2604
Q2410
Q2403
IC2201
SP_UNREG
REG_15.5V
01 MAIN (DC/DC)
JP6101
JP6102
JP6103
UNREG
GND
BAT_SW
IC6001 ~ IC6005
Q6001 ~ Q6008
BATT_CHK
RESET
LIT_3V
AL_3V
LIT_CHG
CHG_STOP
PWR_CTL
TO CN4005_19PIN
TO CN1014_18PIN
IC6101
F1
F2
F3
F4
F5
DRUM_PWR
DRUM_ERR
CAP_PWR
CAP_ERR
REG_6V
SP_UNREG
VF_REG5V
AU_-6.5V
CAM_-6.5V
REG_15.5V
REG_2.2V
D_REG_3V
A_REG_3V
REG_5V
Z_UNREG
BATT_SW
Y/C
Q4302
Q4303
IC4301
Q4305
Q4301
IC4201,Q4304
IC4302~IC4306
REG_2.2V
D_3V
V OUT
Q3703 ~ Q3705
Q3707
Q3709
Q3708
IC3701
IC3702
3V REG
Q3701
PRE/REC
Q3505
IC3501
Q3506
DV MAIN
IC3002
IC3101
IC3005
IC3001
IC3004
1.5V REG
IC3007
REC_2.2V
DV EQ
IC3401
IC3201
Q3301
IC3301
Q3302
IC3203
NOTE)
A_3V = A_REG_3V
D_3V = D_REG_3V
TO CN1010_13PIN
AL_3V
03 CCD (TG/CDS)
(CCD)
CN1003
CN5001
A_REG_3V
REG_15.5V
CAM_-6.5V
IC5601
Q5601
IC5502
12V REG
IC5501
CCD_12V
Q5001
CCD_-6.5V
OP BLOCK
CN5002
02 MDA
CN1002
CN4007
CN4006
IRIS & AF/ZOOM
IC4804
IC4802,IC4803
IC4805,IC4807
Q4804,Q4802
IC4806
IC4851
Q4852
F_Vcc
F_LED
Z_Vcc
IR
IC1801
5V REG
D1801
Q1801
IR_RMC
IRDA
IC1901
IC1902
MDA
Q1601
IC1603
MR_5V
IC1601
IC1602
CN4002
SERVO
IC1403
IC1401,IC1402
IC1404,IC1405
Q1401~Q1403
SYSCON
AL_3VSYS
IC1004
IC1003
IC1006~IC1008
Q1002
IR_5V
IC1101
IC1002
IC1009
LIT_3V
RST
BATT_SW
PWR_CTL
BATTCHK
IC1001
REMOTE
ST SENS
IC6601
Q6610
Q6612~Q6614
Q6607
IR_RMC
CAP_PWR
DRUM_PWR
SPK-
SPK+
CN4005
SPEAKER
10 OPERATION UNIT
CAPSTAN MOTOR
DRUM MOTOR
M
08 W/B
CN1004
L91
Q91
07 STROBE
CN1011
CN6501
Q6503
L6501
Q6501
Q6502
IC6502
CN1016
CN8002
Z_UNREG
PWR_CTL
F8501
3V DC/DC CONV
IC8501
Q8501
Q8001
Q8002
D8001
L8004
L8001
L8003
L8002
IC8001
IC8002
IC8005
X8001
IC8003
IC8004
RST
CN8001 (SOCKET)
MMC CARD
06 DSC
VF LCD
RGT
VDD
CN7651
CN7650
VF_5V
05 VF_BL
VF MAIN
CN1006
L7601
IC7604
VF_REG5V
L7603
IC7601
12V REG
L7602
Q7602
MONITOR LCD
VVDD
HVDD
CN7403
04 MONITOR
L7205
IC7202
15.5V REG
Q7202
L7207
L7212
IC7209
2.8V REG
L7211
L7204
IC7203
IC7207
IC7201
L7206
L7202
CN7401
CN1007
CN7402
Q7501
T7501
L7502
L7501
F7501
TH7501
Q7503
5
4
3
2
1
A
B
C
D
E
F
G
H

4.36 REGULATOR SYSTEM BLOCK DIAGRAM



0 1 MAIN (DC/DC)
FROM BATT TERMINAL
JP6101
UNREG
JP6102
JP6103
BATT_SW
R6002
IC6001
BATT DC DET at POWER OFF
Voltage DET at Pin2
<5.2V:Pin1=L (POWER OFF)
<4.2V:Pin1=L (POWER ON)
DET:L
R6003
L:ON
Q6001
Q6002
R6007
R6005
Q6003 POWER OFF:ON
Q6004 POWER ON:H
R6018
L:ON
Q6008
PWR_CTL
F3
L6103 C6103
FILTER
IC6101
VCC1
VCC2
DC_DC CONV CTL
(H:START L:STOP)
DRUM POWER
DC-DC CONV
IC6101,Q6103 L6104,C6132
DRUM_PWR
DRUM_ERR
CAPSTAN POWER
IC6101,Q6104 L6105,C6134
CAP_PWR
CAP_ERR
6V REG
IC6102 C6136
REG_6V
F5
SP_UNREG
F4
VF_REG 5V
5V SW REG
IC6101,Q6105 L6106,C6169
L6107
REG_5V
F1
F7
F2
F6
SW REG
IC6101 Q6106
C6152
AU_-6.5V
D6104
L6108
CAM_-6.5V
T6101
STEP UP
L6117
REG_15.5V
Q6105
C6153
IC6101,Q6107 L6110,C6160 Q6109,Q6110
2.2V SW REG
L6111
REG_2.2V
AL_3V
3V SW REG
IC6101,Q6108 L6112,C6163
L6113
D_REG_3V
L6114
A_REG_3V
Z_UNREG
(SYSCON)
IC1001
BATT_SW
RESET
CPU
BATT_CHK
PWR_CTL
IC1004
VDD
C1015
IC6004
RESET
RST
IC6003
AL_3V REG
L6001
C6006
D6001
LIT_3V
R6014
LIT_DSC
AL_3V
BATT CHK
Q6006
Q6007
R6012
R6011
BATT_CHK
PWR_CTL
FROM/TO OPE UNIT
CN1002
LIT_CHG
LIT_DSC
IC6002
AL_3.5V REG
C6005
C6004
Q6005
H:ON
R6008
R6009
CN1014
CHG_STOP
TO M. CONN

4.37 VOLTAGE CHARTS

Note: Parts whose data cannot be obtained by physical measurement (for example, CSP IC, etc.) are omitted from the following chart in some cases.

<SYSCON>

MODE PIN NO.	REC	PLAY
IC1002		
1	2.6	2.6
2	0	0
3	2.7	2.6
4	3	3
5	2.9	3
6	0	0
7	0	1.1
8	1.2	1.2
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	2.8	2.9
20	0	2.7
IC1003		
1	3	1.7
2	3.1	3
3	0	0
4	3	3
5	3	3
6	3	3
7	1.6	0
8	3	3
IC1004		
1	0	0
2	3	3
3	3	1.8
4	0	0
5	0	0
6	0.5	0.6
7	0.8	0.8
8	3.1	3.3
IC1005		
1	3	3
2	3	3
3	0	0
4	0	0
5	3	3
IC1006		
1	3	3
2	0	0
3	0	0
4	0	0
5	0.7	3
6	3	3
7	0	0
8	3	3
IC1007		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	3	3
IC1008		
1	3	3
2	3	3
3	3	3
4	0	0
5	3	3
6	3	3
7	3	3
8	3	3
IC1009		
1	1.2	1.4
2	5.5	5.5
3	5.8	5.8
4	0	0
5	0	0
6	2.9	2.9
7	1.2	1.4
8	0	0
IC1101		
1	2.4	2.4
2	2.4	2.4
3	2.4	2.4
4	0	0
5	2.4	2.4
6	0	0
7	0	0
8	4.8	4.8
Q1001		
E	0	0
C	0.5	0.4
B	0	0
Q1002		
E	3	3
C	0	0
B	3	3

<SERVO>

MODE PIN NO.	REC	PLAY
IC1402		
1	2.8	2.8
2	2.9	3
3	0	-
4	0	0
5	3	6.8
6	0	6.8
7	0	0
8	3	3
IC1403		
1	0	3
2	3	3
3	0	3
4	0	0
5	3	3
6	3	3
7	3	3
8	3	3
IC1404		
1	3	3
2	3	3
3	0	0
4	3.1	2.9
5	2.9	3
IC1405		
1	2.9	3
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	2.9	2.9
8	2.9	2.9
Q1401		
E	2.9	3
C	2.9	2.9
B	3	3
Q1402		
1	0	0
2	3	3
3	2.9	3
4	2.8	2.8
5	0	0
Q1403		
1	0	0
2	0	0
3	0	3
4	0	-7.1
5	2.9	2.9
Q1404		
E	-	-
C	-	-
B	-	-

<IRDA>

MODE PIN NO.	REC	PLAY
IC1901		
1	0	0
2	0	0
3	0	0
4	0	0
5	3	3
6	0	0
7	0	0
8	0	0
9	0	0
10	1.2	1.2
11	0	0
12	3	3
13	3	3
IC1902		
1	0	0
2	0	0
3	0	0
4	0	0
5	3	3

<AUDIO AD/DA>

MODE PIN NO.	REC	PLAY
IC2101		
1	2.8	3
2	3	3
3	1.3	1.3
4	1.2	1.3
5	1.3	1.3
6	1.3	1.3
7	3	2.9
8	3	3
9	1.5	1.5
10	1.5	1.5
11	1.5	1.5
12	1.5	1.4
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	1.3	1.3
20	1.3	1.3
21	1.3	1.3
22	0	0
23	-	-
24	-	-

<MAIN AUDIO>

MODE PIN NO.	REC	PLAY
IC2201		
1	1.6	0.5
2	1.6	0.5
3	1.6	0.5
4	1.6	1.6
5	1.6	1.4
6	1.6	1.6
7	0	0
8	2.3	2.3
9	2.3	2.3
10	0	0
11	1.6	1.6
12	1.6	1.4
13	1.6	1.6
14	1.6	0.5
15	1.6	0.5
16	1.6	0.6
17	1.6	0
18	1.6	1.6
19	1.6	1.2
20	1.6	1
21	1.6	0
22	3	3
23	1.6	0
24	1	1.6
25	2	2.1
26	1	0.4
27	2	2
28	1.6	1.6
29	1	2.4
30	2	2
31	1	2.4
32	2.1	2
33	4.9	4.9
34	0	4.7
35	3.4	0
36	2.4	2.4
37	4.7	4.7
38	2.2	2.1
39	3	3
40	0	0
41	3	3
42	0.7	2.3
43	2.2	2.1
44	3	1.6
45	1.6	1.6
46	0	0
47	0	2.3
48	1.6	1.6
49	1.6	1.6
50	1.6	1.6
51	1.6	1.6
52	1.6	0
53	1.6	1.3
54	2	2
55	0	0
56	2.1	2.2
57	1.6	1.6
58	1.6	0.5
59	0	3
60	1.6	0.5
61	1.6	0.5
62	1.6	-
63	1.6	1.6
64	1.6	1.6
Q2201		
E	0	0
C	0	0
B	0.7	0.7
Q2403		
E	5	4.9
C	6.8	6.8
B	6.2	6.1
Q2603		
E	1.1	1
C	3	3
B	1.6	1.6
Q2604		
E	1	1
C	3	3
B	1.6	1.6
Q2606		
E	0	0
C	0	0
B	3.7	3.8

<ANR-DET>

MODE PIN NO.	REC	PLAY
IC2501		
1	2.4	2.4
2	2.4	2.4
3	2.4	2.4
4	0	0
5	1.7	2.7
6	1.8	2.1
7	3.7	3.7
8	4.8	4.8
Q2501		
E	0	0
C	2.7	2.7
B	0	0
Q2502		
1	0	0
2	0	0
3	0	0
4	4	4
5	4	4
6	0	0
Q2504		
E	4.8	4.8
C	4.8	4.8
B	0	0
Q2505		
1	0	0
2	0	0
3	3.7	3.7
4	0	0
5	0	0
6	4.7	4.7
Q2506		
E	0	2.6
C	0	0
B	2.1	2.1
Q2507		
E	4.8	4.8
C	2.6	2.6
B	4.8	4.7
Q2509		
1	0	0
2	0	0
3	0	0
4	2	2
5	0	0
6	1.8	1.8
Q2510		
E	4.8	2
C	2.6	4.8
B	3.3	2.4

<VF MAIN>

MODE PIN NO.	REC	PLAY
IC7601		
1	1.2	1.1
2	1.3	0
3	1.3	1.2
4	11.9	11.9
5	0	0
6	15.6	15.6
IC7604		
1	0	0
2	3	3
3	0	0
4	0.5	0.5
5	4.7	4.7
Q7602		
1	5.6	5.6
2	6.2	6.2
3	0	0
4	6.1	6.2
5	5.6	5.6
6	11.9	11.9

<A/HP SEL>

MODE PIN NO.	REC	PLAY
IC2701		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.7	4.7
IC2751		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	-6.8	-6.8
8	0	0
9	4.6	4.6
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	4.7	4.7
Q2701		
E	-	-
C	-	-
B	-	-
Q2703		
E	0	0
C	0	0
B	0	0
Q2704		
E	0	0
C	0	0
B	-3	-3
Q2705		
E	-	-
C	-	-
B	-	-
Q2751		
E	0	0
C	0	0
B	3	3
Q2752		
1	4.7	4.7
2	4.7	4.7
3	0	4.6
4	-3.8	-1.2
5	6.8	4.5
6	0.5	-2.6
Q2754		
E	0	0
C	0.7	3.4
B	0	0
Q2755		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
Q2756		
E	-8.3	-6.8
C	-6.7	-7.2
B	-6.7	-7.2
Q2757		
E	3	2.9
C	0	0
B	2.9	2.9
Q2758		
1	0	0
2	0	0
3	3	3
4	0	0
5	0	0
6	4.6	4.6
Q2760		
E	0	0
C	0	0
B	0	0

<V OUT>

MODE PIN NO.	REC	PLAY
IC3701		
1	0	0
2	0	1.3
3	2.3	0
4	0	2.3
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	4.8	4.8
16	3.1	3.1
17	0	0
18	0	0
19	0.5	0
20	0	0.5
IC3702		
1	0	0
2	0	0
3	1.3	1.3
4	3.1	3.1
5	0	0
6	4.8	4.8
Q3703		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
Q3704		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	-3.6	-3.6
Q3705		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
Q3706		
1	0	0
2	0	0
3	0	0
4	0	0
5	3	3
6	0	0
Q3707		
1	0	0
2	-3.6	-3.6
3	0	0
4	0	0
5	0	0
6	0	0
Q3708		
E	0	4.8
C	0	0
B	4.8	4.8
Q3709		
E	0	0
C	4.8	4.8
B	0	0

<DV MAIN>

MODE PIN NO.	REC	PLAY
IC3004		
1	2.2	0.4
2	0	0
3	1.3	1.3
4	1.3	1.6
5	0	0
6	2.2	2.2
IC3005		
1	1.4	1.4
2	1.4	1.4
3	0	0
4	0.7	1.3
5	3	3
IC3007		
1	0	1.5
2	1.5	0.8
3	0	0
4	1.5	0.8
5	1.6	1.6

<DV EQ>

MODE PIN NO.	REC	PLAY
IC3203		
1	1.6	0
2	0.5	1.1
3	0	0
4	0	0
5	0	0
6	0	1.5
7	1.5	2.2
8	1.6	2.8
IC3301		
1	0	1
2	0.9	1.2
3	0	1.5
4	0	0
5	0	1.7
6	0.8	1
7	0	1.8
8	0	1
9	0	0
10	0	0
11	0	0
12	0	0
13	3	3
14	3	3
15	2.9	2
16	3	3
17	0	1.2
18	0	1.5
19	0	0
20	0	1.5
21	0.7	1.6
22	0.7	1.5
23	3	3
24	3	3
25	2.9	0
26	3	3
27	0	0.6
28	0	0.6
29	0	0.5
30	2.1	2.7
31	0.6	1.3
32	2.1	2.8
33	0.5	1.5
34	0	1.9
35	1.7	1.5
36	1.7	1.7
37	2.2	1.6
38	0	1.5
39	0	0
40	0	0
41	0	0
42	0	0
43	1.5	1.5
44	0.9	1
45	1.4	1.3
46	0.9	0.9
47	1.2	1.2
48	1.8	1.8
49	1.2	1.2
50	1.1	0
51	0	0
52	0	0
53	0	1.5
54	1.5	1.5
55	3	3
56	3	2.9
57	1.6	2.8
58	1.6	2.8
59	2.6	2.6
60	1.6	2.3
61	0	1.5
62	1.6	2.5
63	1	1.9
64	0	0.8
IC3401		
1	1.6	1.6
2	2.9	0
3	0	1.5
4	2.3	2.3
5	0	0
6	2.9	2.9
7	2.9	0
8	1.1	1.1
9	0	1.5
10	1.3	1.3
11	0	0
12	2.9	2.9
13	4.8	4.8
14	0	0
15	1.5	1.5
16	2.3	2.3
17	1.4	1.3
18	0.7	0.7
19	1.9	0
20	1.5	1.5
21	1.6	0
22	2.3	2.3
23	2.9	2.9
24	0	0
25	0	0
26	2.3	0
27	3	3
28	0	0
29	0	0
30	1.5	1.5
31	2.6	2.6
32	1.5	1.5
Q3301		
E	3	3
C	1.6	2.9
B	3	2.2
Q3302		
E	0	0
C	2.9	0
B	0	3

<PRE/REC>

MODE PIN NO.	REC	PLAY
IC3501		
1	2.9	2.2
2	2.5	1.9
3	2.9	2.9
4	0	0
5	0	0
6	0	0
7	2.6	2.6
8	1.4	1.4
9	0.5	0.5
10	0.5	0.5
11	2.9	2.7
12	1.5	0
13	2.9	2.5
14	3	2.9
15	1.8	0.4
16	0	0
17	-4.3	0
18	7.6	0
19	4.8	4.8
20	1.1	1.3
21	0.5	0.7
22	2.9	2.1
23	0	0
24	0	1.1
25	2.9	2.9
26	0	0
27	0	0
28	0	1.8
29	0	0
30	4.8	4.8
31	0	0
32	-5.7	1.8
33	0	0
34	0	0
35	2.9	3
36	1	1
37	0	0
38	2.6	2.1
39	2.6	0.7
40	1.2	1.3
41	0	0
42	0	0
43	2.9	0
44	0	2.9
45	1.5	1.5
46	0	2.9
47	0	3
48	2.9	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	0.5	2.2
56	0	0
57	2.5	1.1
58	3	2.2
59	0	1.8
60	2.9	2.9
61	2.5	1.8
62	2.9	2.4
63	0	0
64	1	1
Q3501		
E	0	0
C	1.5	1.1
B	0.7	0.7
Q3502		
E	0	0
C	0	0
B	-5.5	0.7
Q3503		
E	0	0
C	0	0
B	-5.8	0.7
Q3504		
E	0	0
C	0.9	1
B	0.8	0.9
Q3505		
E	4.8	4.8
C	4.7	0
B	4.1	4.8
Q3506		
E	0	0
C	0	4.8
B	3	0

<Y/C>

MODE PIN NO.	REC	PLAY
IC4201		
1	1.1	0
2	1.2	0
3	1.2	0
4	1.2	0
5	1.2	0
6	0	0
7	0	0
8	1.1	0
9	1.3	0
10	1.4	0
11	0.8	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0.8	1.4
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	1.2	0
23	0	0
24	0	3
25	0	0
26	3	3
27	0	0
28	0.6	1.3
29	2.3	2.1
30	2.3	2.1
31	0	0
32	0	0
33	0	0
34	1.3	1.8
35	1.3	1.8
36	0	0
37	0	0
38	0	0
39	1.5	2.3
40	0	0
41	0	0
42	2.9	3
43	0	0
44	0	0
45	3	3
46	0	0
47	0	0
48	0	0
IC4302		
1	0	0
2	0	0
3	1.3	1.4
4	1.2	1.1
5	1.2	1.1
6	0	1.2
7	1.4	0.9
8	1.3	1
9	1.3	1.2
10	1.3	1.9
11	1.1	1.1
12	1.2	1.1
13	1.3	1.1
14	1.2	1.1
15	1.1	1.6
16	0	0
17	2.6	2.6
18	2.8	2.9
19	3	3
20	0	0
21	3	2.9
22	2.7	2.7
23	2.6	2.6
24	0	0
25	1.4	1.6
26	1.3	1.2
27	1.3	1.2
28	0	1.2
29	1.2	1.7
30	1.4	1.5
31	1.5	1.6
32	1.6	0.9
33	1.2	1.3
34	1.5	1.3
35	1.3	1.2
36	1.2	1.1
37	1.2	1.2
38	0	0
IC4303		
1	0	0
2	0	0
3	1.4	1.4
4	1.1	1.2
5	1.1	1.2
6	1.1	0.8
7	0.8	0
8	1.3	0.5
9	1.4	1.7
10	1.3	1.3
11	1.2	1.5
12	1.2	0.6
13	1.3	0.6
14	1.3	1.6
15	1.3	1.6
16	0	0
17	0	0
18	0	0
19	3	3
20	0	0
21	3	3
22	0	0
23	0	0
24	0	0
25	1.3	1.6
26	1.5	1.7
27	1.5	0.6
28	1.5	0
29	1.5	1.7
30	0	1.1
31	1.5	1.8
32	1.1	0.5
33	1	0
34	1	0.9
35	1.1	0.5
36	1.1	1.3
37	1.5	1.5
38	0	0
Q4301		
E	0	0
C	0	0
B	0	0
Q4302		
1	1	0.9
2	0.9	1.1
3	0	0.4
4	0	0
5	0	0
6	0	0
Q4303		
1	1.2	1
2	1.8	1.6
3	0	0
4	1.1	1.1
5	0.5	0.5
6	2.9	2.9
Q4304		
E	0	0
C	2.9	2.9
B	0	0
Q4305		
E	0	0
C	0	0
B	2.9	2.9

<DC/DC>

MODE PIN NO.	REC	PLAY
IC6001		
1	6.7	6.7
2	6.6	6.5
3	0	0
4	0	0
IC6002		
1	0	0
2	6.8	6.8
3	3.5	3.5
4	0	0.6
5	0	0.6
IC6003		
1	3.1	3.1
2	0	0
3	6.7	6.7
IC6004		
1	3	3
2	3.1	3.1
3	0	0
4	0	0
IC6101		
1	6.8	6.8
2	1	1
3	0.9	0.9
4	2.2	2.2
5	1.1	1.1
6	1	1
7	2.1	2.2
8	2.2	0
9	1	1
10	1.3	1.3
11	2.2	2.2
12	1	0
13	1.1	0.8
14	1	1.3
15	0.9	2.2
16	1	1
17	1	1
18	1.1	1.1
19	1	0.9
20	0.7	1
21	0.4	1
22	0.4	1.1
23	0.7	0.9
24	0	0
25	0	0
26	0.6	0.6
27	0	0
28	0	0
29	0	0
30	3	0
31	3	3
32	3	3
33	3	3
34	3	3
35	6.8	6.8
36	2.4	2.5
37	0	0
38	0	0
39	0	3.7
40	5.5	5.5
41	0	4.4
42	0	0
43	0	1.9
44	6.8	6.8
45	2.1	1.9
46	2.7	2.7
47	0	0
48	0	0
IC6102		
1	3	3
2	6.8	6.8
3	0	0
4	5.8	5.8
5	1.2	1.2
Q6001		
G	0	0
D	6.7	6.7
S	6.8	6.8
Q6002		
G	6.7	6.7
D	0	0
S	0	0
Q6003		
G	0	0
D	6.5	6.5
S	0	0
Q6004		
E	0	0
C	0	0
B	3	3
Q6005		
G	0	0
D	6.8	6.8
S	6.8	6.8
Q6006		
E	6.8	6.8
C	6.8	6.8
B	6.2	6.1
Q6007		
E	0	3.1
C	0	3.1
B	3	3
Q6008		
G	3	3.1
D	0	0
S	3.9	3.8
Q6103		
1	2.3	2.3
2	2.3	2.3
3	4.4	4.4
4	6.8	6.8
5	2.3	2.3
6	2.3	2.3
Q6104		
1	1.2	1.2
2	1.2	1.2
3	5.5	5.5
4	6.8	6.8
5	1.1	1.2
6	1.1	1.2
Q6105		
1	4.8	4.8
2	4.8	4.8
3	1.9	1.9
4	6.7	6.7
5	4.9	4.9
6	4.9	4.9
Q6106		
1	0	0
2	0	0
3	2.7	2.7
4	6.8	6.8
5	0	0
6	0	0
Q6107		
1	2.2	2.2
2	2.2	2.2
3	4.6	4.9
4	-	-
5	-	-
6	-	-
Q6108		
1	3	3
2	3	3
3	3.7	3.7
4	6.8	6.8
5	3	3
6	3	3
Q6109		
E	6.8	6.8
C	4.6	4.9
B	6.4	6.5
Q6110		
E	0	0
C	4.6	4.9
B	0	0

<ST SENS>

MODE PIN NO.	REC	PLAY
IC6601		
1	0	0
2	5.7	3
3	5.8	3
4	0	0
5	0	0
6	2.9	0
7	0	3
8	0	3
Q6605		
E	0	0
C	4.9	4.9
B	0	0
Q6607		
E	4.9	4.9
C	0	0
B	4.9	4.9
Q6609		
E	0	0
C	0	0
B	0	0
Q6610		
1	0	0
2	0.6	0.5
3	2.9	2.9
4	0	0
5	0	0
Q6611		
E	0	0
C	4.7	4.7
B	0	0
Q6612		
1	0.5	0.5
2	1.1	0
3	2.8	2.7
4	0	0
5	0	0
Q6613		
E	0.6	0.6
C	-	-
B	0	0
Q6614		
1	0	0
2	0	0
3	0	0
4	0.6	0.6
5	0	0

<MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	0	0
2	1	1
3	2.3	2.3
4	1	1
5	0	0
6	0	0
7	1	1
8	0	0
9	0	0
10	0	0
11	0	0
12	5.8	5.8
13	0	0
14	0.5	0.5
15	0	0
16	0	0
17	0.5	0.5
18	1.2	1.2
19	0.5	0.5
20	0.8	0.8
21	0.8	0.8
22	0.8	0.8
23	2.4	2.4
24	0	2.4
25	2.4	0
26	2.4	2.4
27	2.4	2.4
28	2.4	2.4
29	1.5	1.5
30	2.4	2.4
31	2.4	2.4
32	2.4	2.4
33	4.8	4.8
34	0.6	0.6
35	0.6	0.6
36	0.6	0.6
37	1.1	1.1
38	1.4	1.4
39	4.8	4.8
40	0	0
41	0	0
42	3	3
43	0	0
44	3	3
45	3	3
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	1.6	0
53	1.4	1.4
54	0.5	1.4
55	0.5	0.6
56	2.6	2.6
57	2	2
58	0	0
59	0.6	0.6
60	0	0
61	2.4	2.4
62	2.6	2.7
63	2.1	2.1
64	2.4	2.4
65	2.4	2.4
66	2.4	2.4
67	2.4	2.4
68	1.5	1.5
69	0	0
70	1	1
71	1	1
72	1	1
73	1	1
74	2.4	2.4
75	2.4	2.4
76	2.4	2.4
77	0.7	0.7
78	1.9	1.9
79	1.9	1.9
80	1.9	1.9
IC1602		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	1.1	1
11	2.2	2.1
12	1.1	1
13	2.2	2.1
14	1.1	1
15	2.2	2.1
16	2.6	2.4
IC1603		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0.5	0.5
11	0.8	0.8
12	0.6	0.6
13	0.8	0.8
14	0.6	0.5
15	0.8	0.8
16	1.2	1.2
Q1601		
1	0	0
2	0	0
3	4.8	4.9
4	0	0
5	4.8	4.9

<IRIS & AF/ZOOM>

MODE PIN NO.	REC	PLAY
IC4802		
1	3	3.1
2	2.6	2.7
3	2.6	2.7
4	0	0
5	0	2.7
6	2.7	2
7	2.7	2.7
8	4.8	4.8
IC4803		
1	1.1	1.1
2	0.5	0.5
3	0.6	0.5
4	0	0
5	2.7	2.6
6	2.7	2.6
7	1.3	0.6
8	4.8	4.8
IC4804		
1	0.8	0.7
2	2.9	2.9
3	2.7	2.7
4	0	0
5	2.6	2.7
6	2.3	2.3
7	5	5
8	5.8	5.7
IC4805		
1	2.3	0
2	1.3	0.5
3	1.3	0.4
4	0	0
5	2.4	2.4
6	2.7	2.5
7	2.5	2.5
8	4.9	4.8
IC4806		
1	1.3	0
2	1.3	0
3	1.3	0
4	0	0
5	3	2.9
6	1.9	0
7	1.9	0
8	3	2.9
IC4807		
1	2.5	2.5
2	2.5	2.5
3	4.8	4.7
4	0	0
5	2.6	2.5
6	2.6	2.5
7	4.8	4.7
8	4.9	4.8
IC4851		
1	0	0
2	0.7	0.6
3	0	0
4	0	0
5	0	0
6	0.4	0.4
7	0	0
8	3	3
9	6.7	6.8
10	0.5	0.9
11	0	0
12	0.5	0.9
13	6.7	6.8
14	0.5	0.5
15	0	0
16	0.5	0.5
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	6.8	6.8
24	0	0.5
25	0	0
26	0.5	0.5
27	6.8	6.6
28	0.5	0.5
29	0	0
30	1.7	0
31	0	0
32	0	0
33	0	0
34	0	0
35	3	3
36	1.4	1.4
37	1.5	1.4
38	3	3
Q4801		
E	0.5	0.5
C	2.3	2.3
B	1.1	1.1
Q4802		
E	0	0
C	5	5
B	0	0
Q4803		
E	0	0
C	4.9	4.9
B	0	0
Q4804		
E	4.9	4.9
C	2.3	2.3
B	4.8	4.9
Q4852		
E	0	0
C	11.5	3.6
B	0	0

<IR>

MODE PIN NO.	REC	PLAY
IC1801		
1	4.8	4.8
2	4	4
3	0	0
4	0	0
Q1801		
E	0	0
C	0	1.8
B	3	0

<TG CDS>

MODE PIN NO.	REC	PLAY
IC5501		
1	1	0.8
2	2.4	0
3	3.9	0
4	2.9	2.9
5	0	0
6	2.9	2.9
7	0	0
8	0.6	0
9	0	0
10	2.9	2.9
11	1.4	0
12	2.9	2.9
13	0	0
14	1.2	0
15	0	0
16	2.9	2.9
17	2	0
18	1.9	0
19	2.3	0
20	0	0
21	0	0
22	0	3
23	0	0
24	2.9	2.9
25	3	3
26	3	3
27	0	0
28	1.2	1.8
29	0	0
30	1.4	0
31	0	0
32	0	0
33	2.9	0
34	1.4	0
35	0	0
36	2.9	2.9
37	2.8	0
38	0	3
39	-6.7	0
40	-6.4	0
41	-6.3	0
42	12.1	0
43	0	12.1
44	-6.3	12.1
45	0	12.1
46	0	-7.2
47	3	0
48	2.8	0
IC5502		
1	0	0
2	15.6	15.6
3	12.1	12.1
4	0	0
IC5601		
1	0	0
2	2.9	0
3	0	0
4	1.5	2.4
5	2.9	2.9
6	0	0
7	1.3	1.8
8	2.3	2.1
9	0	0
10	2.4	0
11	2.3	0
12	2.8	0
13	1.3	0
14	2.2	2.3
15	2.1	0.5
16	2.9	2.9
17	2	0
18	1.9	0
19	0	0
20	2.8	0
21	2	0
22	2	0
23	2.9	2.9
24	0	3

MODE PIN NO.	REC	PLAY
Q5601		
1	1.5	2.3
2	2.1	2.4
3	0	0
4	2	2.9
5	1.5	2.4
6	2.9	2.9

<VF BL>

MODE PIN NO.	REC	PLAY
Q7650		
E	-	-
C	-	-
B	-	-

<W/B>

MODE PIN NO.	REC	PLAY
Q91		
1	-	-
2	-	-
3	-	-

<JACK>

MODE PIN NO.	REC	PLAY
Q2851		
E	-	-
C	-	-
B	-	-

<CCD>

MODE PIN NO.	EE
IC5001	
1	-6.4
2	-6.3
3	0
4	0
5	0
6	7.9
7	12.1
8	8.5
9	0
10	10.8
11	1.4
12	1.1
13	7.7
14	-6.7
Q5001	
E	7.8
C	12.1
B	8.5

<STROBE>

MODE PIN NO.	EE
IC6502	
1	4.7
2	0
3	0
4	0
5	4.9
Q6501	
E	0
C	5.6
B	5.8
Q6502	
E	0
C	5.6
B	0
Q6503	
E	5.8
C	0
B	5.6
Q6506	
E	0
C	-
B	0

<MONITOR>

MODE PIN NO.	EE
IC7201	
1	0
2	0
3	1.4
4	0
5	1.4
6	6
7	0
8	1.4
9	6
10	0
11	6.1
12	0
13	1.4
14	12.6
15	12.6
16	2.9
17	1.5
18	0
19	2.7
20	0
21	0
22	0
23	0
24	1.4
25	0
26	1.4
27	1.5
28	0.4
29	2.5
30	2.9
31	0
32	2.8
33	2.8
34	0
35	12.5
36	1.4
37	0
38	6
39	12
40	6
41	1.4
42	0
43	6
44	1.4
45	6.1
46	1.4
47	12
48	6
49	2.8
50	2.7
51	2.5
52	1.6
53	1.7
54	1.7
55	2.2
56	2
57	1.5
58	2.8
59	1.6
60	0
61	1.9
62	1.5
63	1.5
64	0
IC7202	
1	1.7
2	0
3	1.3
4	12
5	0
6	15.6
IC7203	
1	0
2	3
3	0
4	2.9
5	3
6	3
7	0
8	2.8
IC7204	
1	0
2	1.8
3	0
4	2.9
5	2.9
IC7205	
1	0
2	1.4
3	0.5
4	0
5	1.4
6	1
7	0
8	2.9
IC7206	
1	2.8
2	1.5
3	1.5
4	0
5	1.4
6	0
7	2.8
8	2.9
IC7207	
1	2.9
2	0
3	1.4
4	0
5	2.8
6	1.5
7	2.8
8	2.9
IC7209	
1	2.8
2	4.8
3	0
Q7202	
1	5.6
2	6.2
3	0
4	6.1
5	5.6
6	12
Q7203	
E	1.2
C	0
B	0.6
Q7501	
E	0
C	0
B	0.7
Q7503	
E	5.6
C	5.5
B	0
Q7504	
1	-
2	-
3	-
4	-
5	-
6	-

<DSC>

MODE PIN NO.	EE
IC8003	
1	3
2	0
3	2.9
4	0
5	2.9
6	0
7	2.9
8	2.9
9	2.9
10	2.9
11	2.9
12	2.9
13	2.9
14	2.9
15	0
16	0
17	0
18	1.3
19	0
20	1.4
21	0
22	2.9
23	2.9
24	2.9
25	0
26	2.9
27	2.9
28	2.9
29	2.9
30	2.9
31	0
32	2.9
33	2.9
34	2.9
35	2.9
36	2.9
37	2.9
38	2.9
39	2.9
40	2.9
41	2.9
42	0
43	0
44	2.9
45	2.9
46	2.9
47	2.9
48	2.9
49	2.9
50	0
51	2.9
52	2.9
53	2.9
54	2.9
55	2.9
56	0
57	2.9
58	2.9
59	2.9
60	2.9
61	2.9
62	2.9
63	2.9
64	2.9
65	0
66	0
67	2.9
68	2.9
69	2.9
70	2.9
71	2.9
72	2.9
73	2.9
74	2.9
75	0
76	2.9
77	2.9
78	0
79	2.9
80	2.9
81	0
82	2.9
83	2.9
84	2.9
85	2.9
86	2.9
87	2.9
88	2.9
89	2.9
90	0
91	2.9
92	0
93	2.9
94	2.9
95	2.9
96	2.9
97	2.9
98	2.9
99	2.9
100	0
IC8005	
1	0
2	0
3	0
4	0
5	3
IC8501	
1	3
2	0
3	3
4	3.5
5	6.6
Q8001	
E	0
C	15.4
B	0
Q8002	
E	15.5
C	0
B	15.4
Q8501	
1	3
2	3
3	3.5
4	6.6
5	3
6	3

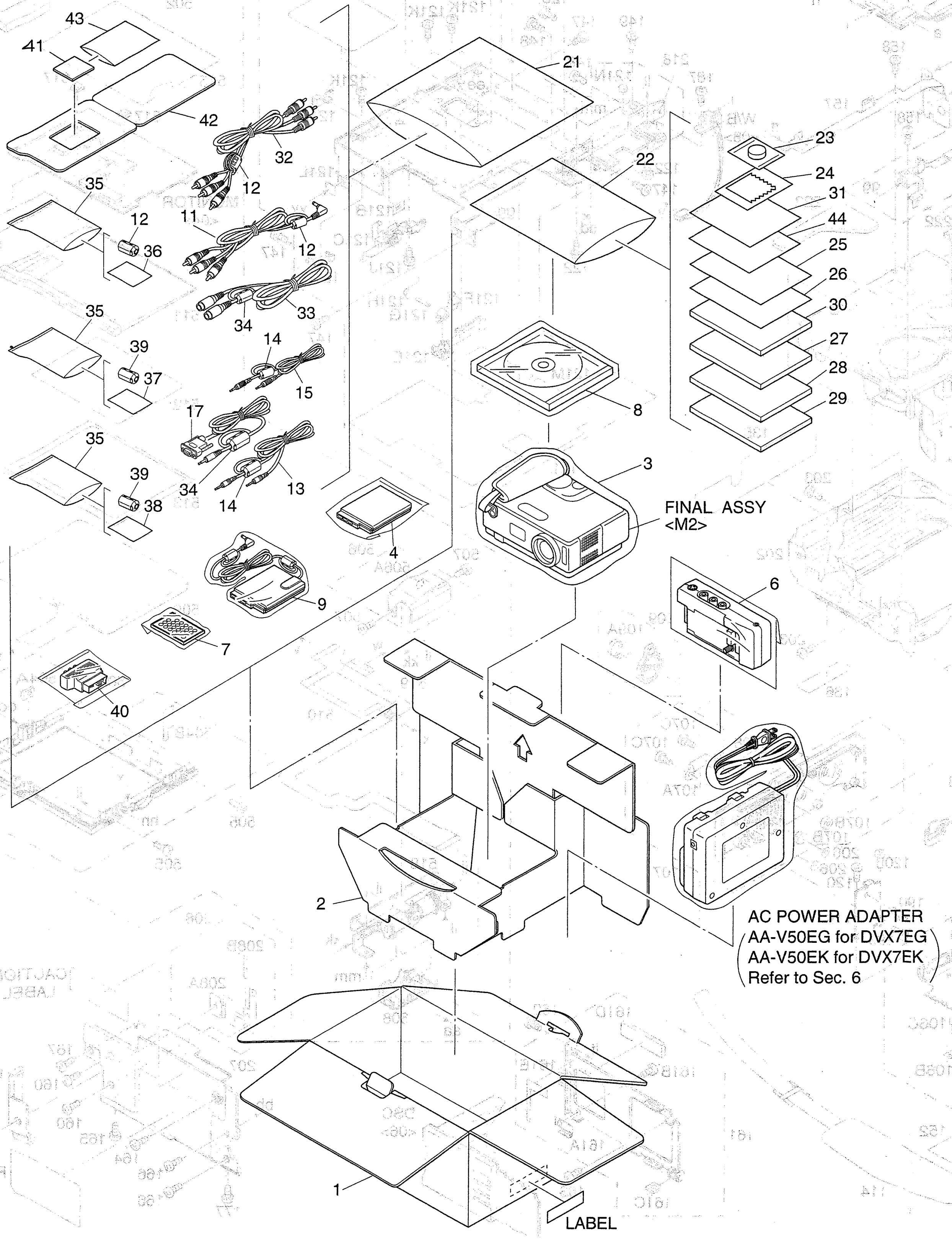
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

* *

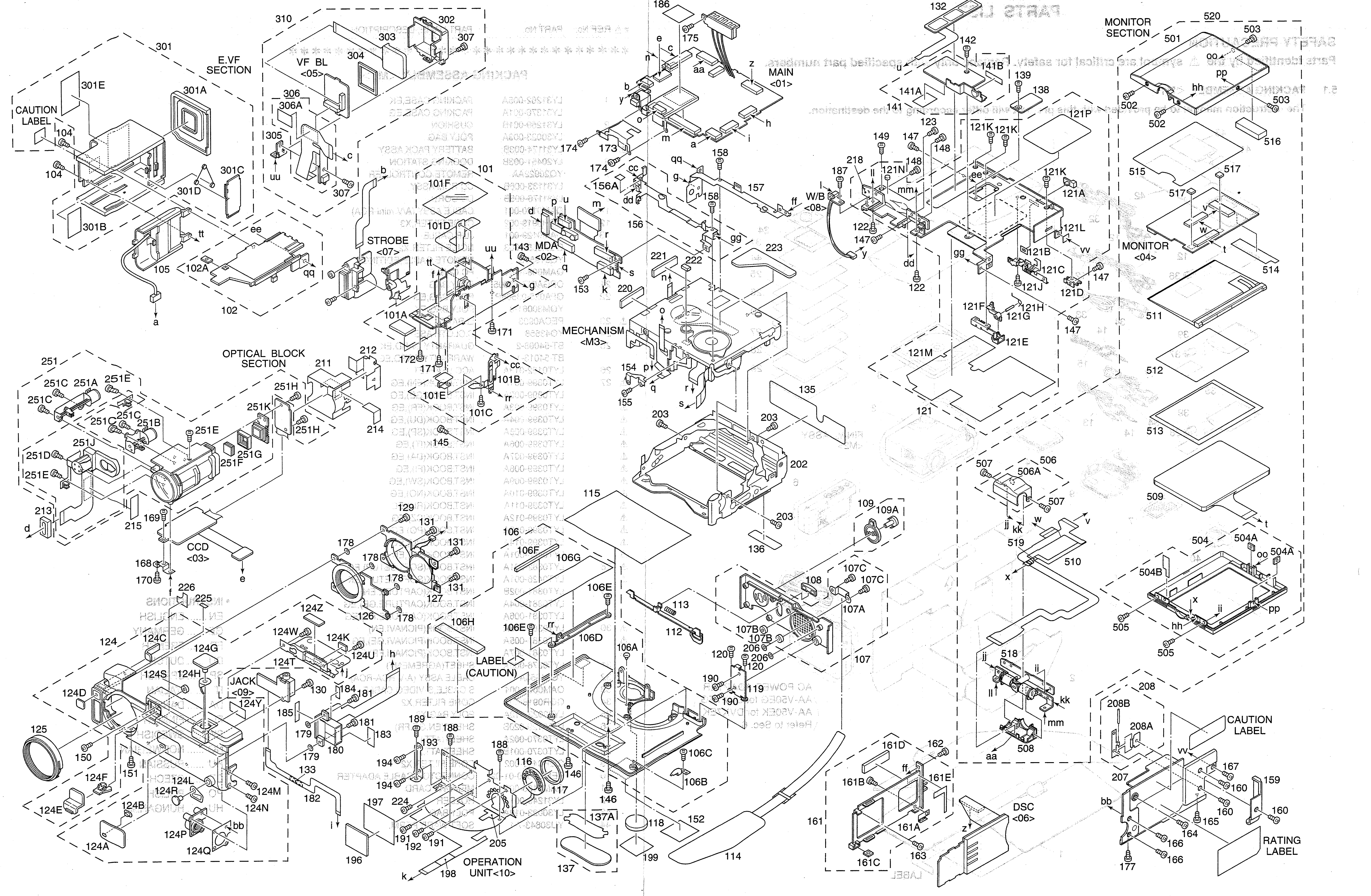
PACKING ASSEMBLY <M1>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		1	LY31262-005A	PACKING CASE,EK
			LY31376-001A	PACKING CASE,EG
		2	LY31259-001B	CUSHION
		3	LY30023-003A	POLY BAG
	⚠	4	LY31174-003B	BATTERY PACK ASSY
		6	LY20451-003B	DOCKING STATION
		7	YQ20922AA	REMOTE CONTROLLER
		8	LY31133-006B	CD ROM ASSY
		9	LY31176-005B	DC CORD
		11	QAM0120-001	CABLE ASSY (A/V mini-RCA)
		12	QQR0919-002	CORE FILTER,X3
		13	QAM0129-001	JLIP CABLE
		14	QQR0855-003	NOISE FILTER,X2
		15	YQ31950C	REMOTE CABLE,EDITING
		17	QAM0084-001	PC CABLE
		21	QPGA017-03005	POLY BAG
		22	QPA025-03505P	POLY BAG,EG
			YQM30061-3	POLY BAG,EK
	⚠	23	PECA0903	LI BATTERY
		24	YQ43558	C.CLOTH ASSY
		25	BT-54008-2	GUARANTY CARD,EK
			BT-54013-1	WARRANTY CARD,EG
		26	LYT0162-013A	ACC.LEAFLET
	⚠	27	LYT0399-001A	INST.BOOK(EN),EG
	⚠		LYT0399-002A	INST.BOOK(GE),EG
	⚠		LYT0399-003A	INST.BOOK(FR),EG
	⚠		LYT0399-004A	INST.BOOK(DU),EG
	⚠		LYT0399-005A	INST.BOOK(SP),EG
	⚠		LYT0399-006A	INST.BOOK(IT),EG
	⚠		LYT0399-007A	INST.BOOK(DA),EG
	⚠		LYT0399-008A	INST.BOOK(FI),EG
	⚠		LYT0399-009A	INST.BOOK(SW),EG
	⚠		LYT0399-010A	INST.BOOK(NO),EG
	⚠		LYT0399-011A	INST.BOOK(RU),EG
	⚠		LYT0399-012A	INST.BOOK(CZ),EG
	⚠		LYT0399-013A	INST.BOOK(PO),EG
	⚠		LYT0399-014A	INST.BOOK(HU),EG
	⚠		LYT0400-001A	INST.BOOK(EN),EK
	⚠	28	LYT0382-001A	INST.BOOK(SOFT.SETUP),EG
	⚠		LYT0428-001A	INST.BOOK(SOFT.SETUP),EK
		29	LYT0381-002B	INST.BOOK(CAPTURE.EN)
			LYT0381-004A	INST.BOOK(CAPTURE.GE),EG
			LYT0381-006A	INST.BOOK(CAPTURE.FR),EG
	⚠	30	LYT0381-003A	INST.BOOK(PICNAVI.EN)
	⚠		LYT0381-005A	INST.BOOK(PICNAVI.GE),EG
	⚠		LYT0381-007A	INST.BOOK(PICNAVI.FR),EG
		31	LYT0378-003A	SHEET(AGREMENT)
		32	YQ31953A	CABLE ASSY (A/V RCA-RCA)
		33	QAM0004-004	S CABLE,S-VIDEO CABLE
		34	QQR0918-002	CORE FILTER,X2
		35	LY30023-012A	POLY BAG,X3
		36	LYT0129-020B	SHEET(EN.GE.FR)
		37	LYT0370-002A	SHEET(ATT.)
		38	LYT0370-001B	SHEET(ATT.)
		39	QQR0491-002	CORE FILTER,X2
		40	PEMC1000-01-02	CONNECTOR,CABLE ADAPTER
		41	QAM0185-002	MEMORY CARD
		42	LY31249-001A	HOLDER
		43	LY30023-013A	POLY BAG
		44	YU30843-7-1	SOFT WARE PERM.

• INSTRUCTIONS

EN .... ENGLISH
GE ...... GERMANY
FR .... FRENCH
DU ...... DUTCH
SP ...... SPANISH
IT .... ITALIAN
DA .... DANISH
FI .... FINNISH
SW ...... SWEDISH
NO ...... NORWEGIAN
RU ...... RUSSIAN
CZ .... CZECH
PO ...... POLISH
HU ...... HUNGARIAN

5.2 FINAL ASSEMBLY <M2>


E.VF SECTION
CAUTION LABEL
VF BL <05>
OPTICAL BLOCK SECTION
CCD <03>
STROBE <07>
MDA <02>
MAIN <01>
MECHANISM <M3>
W/B <08>
MONITOR SECTION
MONITOR <04>
JACK <09>
LABEL (CAUTION)
OPERATION UNIT<10>
DSC <06>
CAUTION LABEL
RATING LABEL
301
301A
301B
301C
301D
301E
302
303
304
305
306
306A
307
310
101
101A
101B
101C
101D
101E
101F
102
102A
104
105
106
106A
106B
106C
106D
106E
106F
106G
106H
107
107A
107B
107C
108
109
109A
112
113
114
115
116
117
118
119
120
121
121A
121B
121C
121D
121E
121F
121G
121H
121J
121K
121L
121M
121N
121P
122
123
124
124A
124B
124C
124D
124E
124F
124G
124H
124K
124L
124M
124N
124P
124Q
124R
124S
124T
124U
124W
124Y
124Z
125
126
127
129
131
132
133
135
136
137
137A
138
139
141
141A
141B
142
143
145
146
147
148
149
150
151
152
153
154
155
156
156A
157
158
159
160
161
161A
161B
161C
161D
161E
162
163
164
165
166
167
168
169
170
171
172
173
174
175
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
196
197
198
199
202
203
205
206
207
208
208A
208B
211
212
213
214
215
218
220
221
222
223
224
225
226
251
251A
251B
251C
251D
251E
251F
251G
251H
251J
251K
501
502
503
504
504A
504B
505
506
506A
507
508
509
510
511
512
513
514
515
516
517
518
519
520

******** ************************

FINAL ASSEMBLY <M2>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	101	LY20414-001H	LOWER COVER ASSY
	101A	LY30016-0S4A	SPACER-A
	101B	LY41297-001C	ARM ASSY
	101C	LY30018-063A	SPECIAL SCREW
	101D	LY41300-001A	SHEET(EARTH)
	101E	LY41590-001B	SHEET(GND)
	101F	LY41576-001C	SHEET(L)
	102	LY31255-001C	UPPER COVER ASSY
	102A	LY40162-001A	BKT
	104	LY30018-037A	SPECIAL SCREW,X2
	105	LY31093-001B	MIC UNIT
	106	LY20444-006B	CASS.COVER ASSY
	106A	LY41435-001A	INDICATOR(C.C)
	106B	LY41551-001A	BKT(EJECT)
	106C	QYSPSPT1715Z	SCREW
	106D	LY41408-001C	BKT(CASS)
	106E	LY30018-018A	SPECIAL SCREW,X2
	106F	LY30016-0S3B	SPACER-A
	106G	LY30016-0Q3B	SPACER-A
	106H	LY30016-0U5A	SPACER-A
	107	LY31098-003B	OPE.COVER ASSY
	107A	LY41588-001A	HOOK(OPE)
	107B	LY41553-001B	STUD,X2
	107C	LY30018-085A	SPECIAL SCREW,X2
	108	LY41452-001A	KNOB(EJECT)
	109	LY41608-001A	BUTTON ASSY
	109A	LY41499-001B	DIAL(A-M SELECT
	112	LY41319-001B	PLATE(LOCK)
	113	LY30002-030A	COMPRES. SPRING
	114	LY31118-002A	GRIP BELT
	115	LY41314-001A	SHEET(CC)
	116	QAS0015-001	SPEAKER
	117	LY40301-001A	SPACER(SPK)
⚠	118	QAB0018-001	LI BATTERY
	119	LY41356-001C	BRACKET
	120	QYSPSPT1730Z	SCREW,X2
⚠	121	LY20422-003E	UPPER CASE ASSY
	121A	LY31102-001A	KNOB(LOCK)
	121B	LY41397-001A	PLATE(KNOB)
	121C	LY41324-001B	BATT.LOCK ASSY
	121D	LY41328-001B	BKT(C.COVER)
	121E	LY41411-001B	BKT(C.COVER)2
	121F	LY41400-001E	CATCHER(MON.)
	121G	LY41398-001A	SHAFT(CATCHER)
	121H	LY41399-001A	TORSION SPRING
	121J	LY30018-012A	SPECIAL SCREW
	121K	LY30018-043B	SPECIAL SCREW,X3
	121L	LY41604-001C	SHEET(UPPER)
	121M	LY41603-001A	SHEET(UPPER B.S)
	121N	LY41640-001A	SPACER(UPPER)
	121P	LY41605-003A	LABEL(UPPER)
	122	LY30018-069A	SPECIAL SCREW,X2
	123	LY30018-012A	SPECIAL SCREW
	124	LY20424-006B	FRONT COVER ASSY
	124A	LY41329-001A	IR WINDOW
	124B	LY40695-001A	INDICATOR(TALLY)
	124C	LY41331-001B	WINDOW(W.B)
	124D	LY41495-001A	WINDOW(STB)
	124E	LY41595-001B	COVER(DV)
	124F	LY41584-001B	HINGE(DV)
	124G	LY41586-002A	COVER(JACK)
	124H	LY41585-001B	HINGE(JACK)
	124K	LY30016-0D9A	SPACER-A
	124L	LY41598-001B	HOOK(FRONT)
	124M	QYSPSGT1740R	SCREW
	124N	QYSPSPT1720R	SCREW
	124P	LY31149-001B	BASE
	124Q	LY41601-001A	PLATE
	124R	LY41481-001B	SPECIAL SCREW
	124S	LY41607-001A	SHEET(DV)
	124T	LY41321-001A	HINGE ASSY
	124U	LY30018-006B	SPECIAL SCREW
	124W	LY30018-031A	SPECIAL SCREW
	124Y	LY41511-001A	SPACER(JACK)
	124Z	LY30016-0U2B	SPACER-A
	125	LY31105-001D	HOOD
	126	LY31125-001B	COVER(FRONT)
	127	LY31123-001E	L.SHUTTER ASSY
	129	LY30018-080A	SPECIAL SCREW
	130	LY30018-088A	SPECIAL SCREW
	131	QYSPSPT1735Z	SCREW,X3
	132	LY31104-003B	SUB OPE ASSY
	133	LY41617-001A	SHEET(FRONT)
	135	LY40698-002A	LABEL(HOUSING)
	136	LY40699-002A	LABEL(PUSH)
	137	LY41597-001A	COVER(CC)ASSY
	137A	LY41560-001A	SHEET(COVER)
	138	LY41393-001B	COVER(JIG CONN)
	139	LY30018-070A	SPECIAL SCREW
	141	LY41646-001B	UPPER COVER ASSY
	141A	LY41665-001A	SPACER(CU)
	141B	LY30016-0V1A	SPACER-A
	142	LY30018-070A	SPECIAL SCREW
	143	LY30018-018A	SPECIAL SCREW
	145	LY30018-077A	SPECIAL SCREW
	146	LY30018-043B	SPECIAL SCREW,X2
	147	LY30018-065A	SPECIAL SCREW,X4
	148	QYSPSPT1750R	SCREW,X2
	149	QYSPSPT1725R	SCREW
	150	QYSPSPT1750R	SCREW
	151	LY30018-070A	SPECIAL SCREW
	152	LY41618-001A	SHEET(CASSETTE)
	153	LY30018-049A	SPECIAL SCREW
	154	LY40709-001C	BRACKET(GND)
	155	YQ43893-4	MINI SCREW
	156	LY41565-001A	BKT(1)ASSY
	156A	LY41566-001A	SHEET(BKT)
	157	LY31107-001A	BRACKET(2)
	158	LY30019-003A	SPECIAL SCREW,X2
	159	LY31095-001C	COVER(CARD)
	160	LY30018-032A	SPECIAL SCREW,X3
	161	LY41489-001C	COVER(PWB)ASSY
	161A	LY41490-001B	BRACKET(DSC)
	161B	LY30018-005A	SPECIAL SCREW
	161C	LY40162-001A	BKT
	161D	LY30016-0T6A	SPACER-A
	161E	LY41614-001A	SHEET(DSC)
	162	LY30018-049A	SPECIAL SCREW
	163	LY30018-070A	SPECIAL SCREW
	164	QYSPSPT1735R	SCREW
	165	LY30018-070A	SPECIAL SCREW
	166	QYSPSGT1750R	SCREW,X2
	167	LY30018-070A	SPECIAL SCREW
	168	LY41333-001A	BRACKET(CCD)
	169	LY30018-018A	SPECIAL SCREW
	170	LY30018-020A	SPECIAL SCREW
	171	LY30018-018A	SPECIAL SCREW,X2
	172	LY30018-021A	SPECIAL SCREW
	173	LY31109-001A	SHIELD COVER
	174	YQ43893-3	MINI SCREW,X2
	175	QYSPSPT1735R	SCREW
	177	LY30018-006B	SPECIAL SCREW
	178	LY41636-001B	SPACER,X4
	179	LY41643-001A	SPACER(M.PIN),X2
	180	LY41334-001B	MULTI.CONN.ASSY
	181	QYSPSPT1730Z	SCREW,X2
	182	QAL0167-001	FPC
	183	LY30016-0S5A	SPACER-A
	184	LY30016-0S6A	SPACER-A
	185	LY30016-0X5A	SPACER-A
⚠	186	LY41070-002A	LABEL(FUSE)
	187	QYSPSPT1730D	SCREW
	188	LY30018-053A	SPECIAL SCREW,X2
	189	LY30018-065A	SPECIAL SCREW
	190	LY30018-021A	SPECIAL SCREW,X2
	191	LY30018-043B	SPECIAL SCREW,X2
	192	LY30018-063A	SPECIAL SCREW
	193	LY41637-001A	BRACKET(CC)2
	194	QYSPSGT1740R	SCREW,X2
	196	LY30016-0U1A	SPACER-A
	197	LY30016-0U7A	SPACER-A
	198	LY30016-0U9B	SPACER-A
	199	LY30016-059A	SPACER-A
	202	LY30483-001K	CASSETTE HOUSING ASSY

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	203	YQ43893-4	MINI SCREW,X3
	205	LY41639-001A	SHEET(OPE UNIT)
	206	LY41655-001A	SPACER,X2
	207	LY20419-001B	BOTTOM COVER
	208	LY41312-001C	HINGE ASSY
	208A	LY31097-001C	BRACKET
	208B	LY41313-001A	SHAFT
	211	LY30944-001B	SHIELD CASE(1)
	212	LY31286-001B	SHIELD CASE(2)
	213	QQR0895-012	FERRITE CORE
	214	LY30016-0V3A	SPACER-A
	215	LY30016-0U4B	SPACER-A
	218	LY30016-0W2A	SPACER-A
	220	LY30016-0T4A	SPACER-A
	221	LY30016-0T5A	SPACER-A
	222	LY30016-0T7A	SPACER-A
	223	LY41613-001A	SPACER
	224	LY30018-021A	SPECIAL SCREW
	225	LY30016-0W3A	SPACER-A
	226	LY41669-001A	SPACER

– OPTICAL BLOCK SECTION –

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	251	YS20973D	OPTICAL BLOCK ASSY
	251A	LY30723-001A	ZOOM MOTOR
	251B	LY30724-001B	FOCUS MOTOR
	251C	LY30727-002A	SCREW,X4
	251D	LY30018-060A	SPECIAL SCREW
	251E	LY30727-001A	SCREW,X3
	251F	LY41377-001A	OP LPF
	251G	LY30721-001A	SPACER RUBBER
	251H	QYSPSGU1750Z	SCREW,X2
	251J	LY31135-001A	IRIS MOTOR UNIT
	251K	YS40168D	CCD BASE ASSY

- ELECTRONIC VIEWFINDER SECTION -

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	301	LY31087-002E	VF ASSY
	301A	LY31089-001A	EYE CUP
	301B	LY30016-0J8A	SPACER-A
	301C	LY31092-001B	COVER(SLIDE)
	301D	LY41308-001A	TORSION SPRING
	301E	LY41600-002A	LABEL(CAUTION)
	302	LY31110-001B	HOLDER(LCD)
	303	QLD0073-001	LCD MODULE
	304	LY40127-001A	SPACER(LCD.)
	305	LY41338-001A	BRACKET(SW)
	306	LY31159-001A	VF FPC ASSY
	306A	LY30016-0V5A	SPACER-A
	307	QYSPSPT1720D	SCREW,X2
⚠	310	LYH20074-003B	EVF ASSY

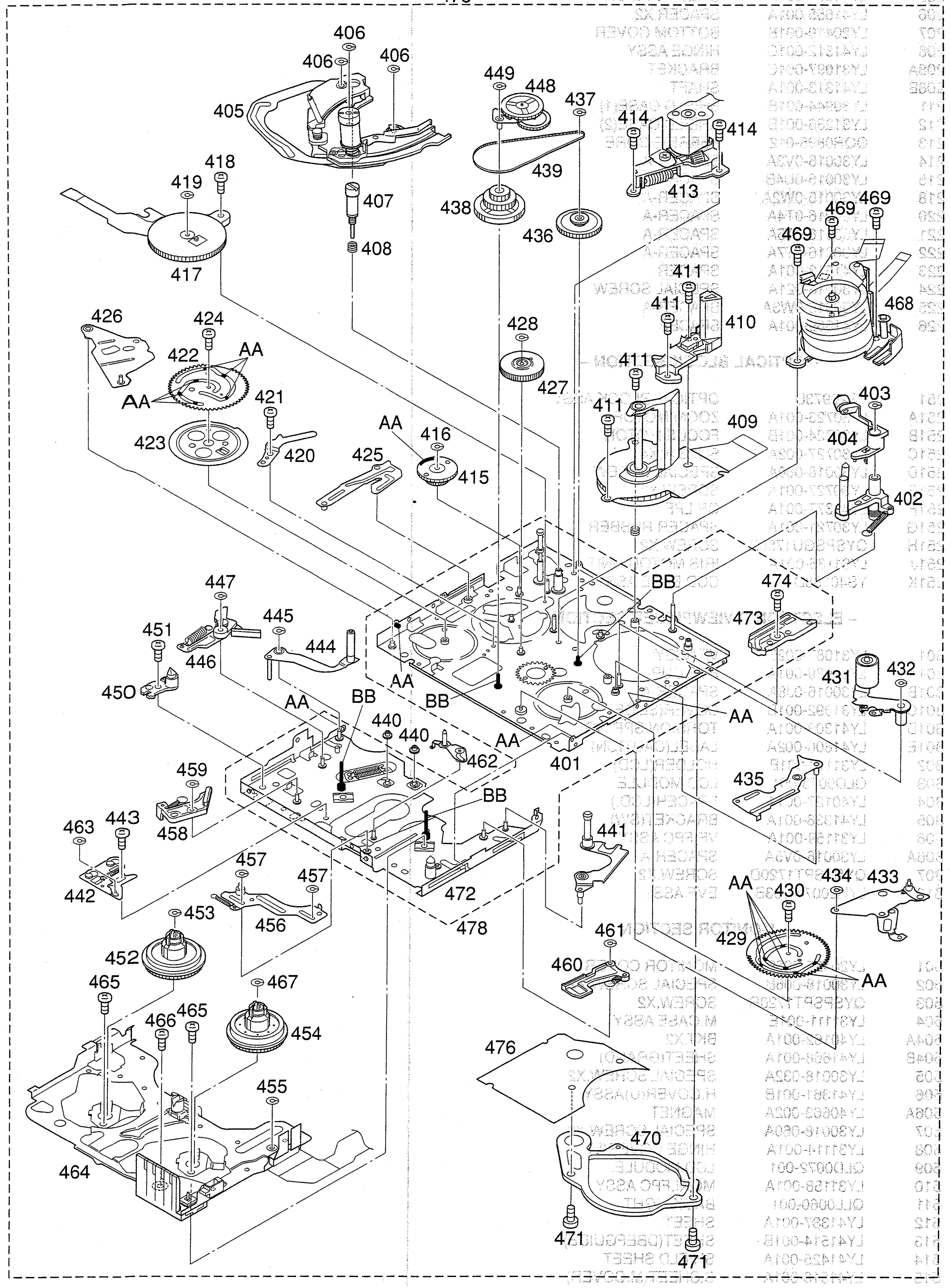
– MONITOR SECTION –

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	501	LY20425-006B	MONITOR COVER
	502	LY30018-006B	SPECIAL SCREW,X2
	503	QYSPSPT1720R	SCREW,X2
⚠	504	LY31111-001E	M.CASE ASSY
	504A	LY40162-001A	BKT,X2
	504B	LY41668-001A	SHEET(GRAND)
	505	LY30018-032A	SPECIAL SCREW,X2
	506	LY41361-001B	H.COVER(U)ASSY
	506A	LY40663-002A	MAGNET
	507	LY30018-060A	SPECIAL SCREW,X2
	508	LY31114-001A	HINGE COVER(L)
	509	QLD0072-001	LCD MODULE
	510	LY31158-001A	MONI.FPC ASSY
	511	QLL0060-001	BACK LIGHT
	512	LY41387-001A	SHEET
	513	LY41514-001B	SHEET(DBEFGUIDE)
	514	LY41425-001A	SHIELD SHEET
	515	LY41513-001A	S.SHEET(M.COVER)
	516	LY30016-0P8A	SPACER-A
	517	LY30016-0S9A	SPACER-A,X2
	518	LY31112-001C	HINGE ASSY
	519	LY30016-0X2A	SPACER-A
⚠	520	LYH20072-006A	MONITOR ASSY

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.


475
406
406
406
405
449
448
437
414
414
418
419
407
439
438
469
469
469
408
436
417
411
411
410
468
426
424
422
AA
AA
428
421
427
411
403
AA
416
409
423
420
425
415
404
402
447
445
451
444
BB
474
473
446
431
432
450
AA
BB
BB
AA
440
440
AA
462
401
459
443
463
458
457
BB
435
441
457
442
453
456
472
478
AA
430
434
433
452
461
429
465
467
460
AA
466
465
454
476
455
470
464
471
471

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

* *

MECHANISM ASSEMBLY <M3>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	LY10077-001G	MAIN DECK ASSY
402	LY30436-001F	SLANT POLE ARM ASSY
403	YQ44246	SLIT WASHER
404	LY30438-001B	CLEANER ARM ASSY
405	LY10080-001N	RAIL ASSY
406	YQ44246	SLIT WASHER,X3
407	LY40353-001D	GUIDE ROLLER(S)ASSY
408	LY30002-006C	COMPRESSION SPRING
409	QAR0026-001	CAPSTAN MOTOR
410	LY30504-001B	CATCHER(T)ASSY
411	YQ43893	MINI SCREW,X4
413	LY30448-001C	MOTOR BKT ASSY
414	YQ43893	MINI SCREW,X2
415	LY30449-001C	WORM WHEEL
416	YQ44246	SLIT WASHER
417	LY40496-001C	ROTARY ENCODER
418	YQ43893	MINI SCREW
419	YQ44246	SLIT WASHER
420	LY40614-001B	GEAR HOLDER
421	YQ43893	MINI SCREW
422	LY30450-001C	MAIN CAM
423	LY30840-001A	BRAKE CTL PLATE
424	YQ43893	MINI SCREW
425	LY40373-001C	TC LEVER ASSY
426	LY30452-001E	SLIDE LEVER ASSY
427	LY30454-001A	CONNECT GEAR
428	YQ44246	SLIT WASHER
429	LY30455-001B	SUB CAM
430	YQ43893	MINI SCREW
431	LY30456-001B	PINCHROLLER ARM ASSY
432	YQ44246	SLIT WASHER
433	LY30459-001A	CHARGE ARM ASSY
434	YQ44246	SLIT WASHER
435	LY40387-001B	BC LEVER ASSY
436	LY40389-001D	R.D.PULLEY ASSY
437	YQ44246-2	SLIT WASHER
438	LY40391-001D	CENTER GEAR ASSY
439	LY40396-001A	TIMING BELT
440	LY40413-001A	COLLAR,X2
441	LY30468-001C	GUIDE ARM ASSY
442	LY30618-001C	SLIDE GUIDE PLATE ASSY
443	YQ43893-2	MINI SCREW
444	LY40420-001J	TENSION ARM ASSY
445	YQ44246	SLIT WASHER
446	LY30471-001D	PAD ARM ASSY
447	YQ44246	SLIT WASHER
448	LY40432-001E	IDLER ARM ASSY
449	YQ44246-2	SLIT WASHER
450	LY30476-001A	GUIDE PIN(SUPPLY)
451	YQ43893	MINI SCREW
452	LY40441-001B	REEL DISK(SUPPLY)ASSY
453	YQ44246	SLIT WASHER
454	LY40443-001B	REEL DISK(TAKE-UP)ASSY
455	YQ44246	SLIT WASHER
456	LY30477-001D	CTL PLATE ASSY
457	YQ44246	SLIT WASHER,X2
458	LY40444-001E	LOADING BRAKE ASSY
459	YQ44246	SLIT WASHER
460	LY40452-001A	SUB BRAKE ASSY
461	YQ44246	SLIT WASHER
462	LY30479-001B	RELEASE GUIDE ASSY
463	YQ44246	SLIT WASHER
464	LY20146-001G	REEL COVER ASSY
465	YQ43893-4	MINI SCREW,X2
466	YQ43893	MINI SCREW
467	YQ44246	SLIT WASHER
468	YDV2086I	DRUM ASSY
469	YQ43893	MINI SCREW,X3
470	LY20138-001C	PWB HOLDER
471	YQ43893	MINI SCREW,X2
472	LY10082-001H	SLIDE DECK ASSY
473	LY30462-001A	LOADING GUIDE
474	YQ43893	MINI SCREW
475	YMA0025E	MECHA(A)ASSY
476	LY41109-001A	SHIELD
478	LY30496-001L	DECK ASSY

5.4 ELECTRICAL PARTS LIST

****

MAIN BOARD ASSEMBLY <01>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PW	YB10245E-03	MAIN BOARD ASSY
IC1001	YQ44813A	CSP IC ASSY
IC1002	UPD6466GS-535-X	IC(MICRO C ROM)
IC1003	X25097M8-2.7-X	IC
IC1004	RS5C314	IC
IC1005	TC7S00FU	IC
IC1006	TC7W04FK	IC
IC1007	TC7W32FK	IC
IC1008	TC7W08FK	IC
IC1009	BA6417F	IC
IC1101	TA75W01FU	IC
IC1401	YQ44823A	CSP IC ASSY
IC1402	TC7W14FK	IC
IC1403	TC7W66FK	IC
IC1404	TC7S66FU	IC(DIGITAL)
IC1405	TC4W53FU	IC
IC2101	AK4518-VF-X	IC
IC2201	LA74200W	IC
IC2501	BA10358FV	IC
IC2701	SN74AHC1G66K	IC
IC2751	TC74HC4052AFT	IC
IC3001	JCY0106-2	IC(DIGITAL)
IC3002	UPD4218165LFB50	IC(DIGITAL)
IC3004	TK11216BMC	IC
IC3005	SN74AHC1G04K	IC
IC3007	TC7SL00FU	IC(DIGITAL)
IC3101	PDI1394P11EB	IC
IC3201	JCY0107-2	IC
IC3203	TLC2940IPW	IC
IC3301	JCY0108	IC
IC3401	MB88345PF	IC
IC3501	AN3731FHQ	IC(DIGITAL)
IC3701	NJM2538V	IC
IC3702	TK11331BMC	IC
IC4201	AD9200JST	IC
IC4301	JCY0113	IC
IC4302	TMS4C2973-28-X	IC
IC4303	TMS4C2973-28-X	IC
IC4304	TC7SH08FU	IC(DIGITAL)
IC4305	TC7SH08FU	IC(DIGITAL)
IC4306	TC7SH08FU	IC(DIGITAL)
IC6001	S-80842ANNP-W	IC
IC6002	S-81235SG-QI-X	IC
IC6003	S-81330HG-KB-X	IC
IC6004	S-80823ANNP-W	IC
IC6101	FA3675F	IC
IC6102	BA00ASFP	IC
IC6601	TC7W74FK	IC
	or TC7WH74FK	IC
IC7601	TK11900M	IC
IC7604	TC7SET08FU	IC(DIGITAL)
Q1001	2SC4617/RS/-X	TRANSISTOR
Q1002	RN2104FT	TRANSISTOR
Q1401	DTA114EE	TRANSISTOR
Q1402	UMC3N	TRANSISTOR
Q1403	UMC3N	TRANSISTOR
Q1404	DTC143EE	TRANSISTOR
Q2201	2SC4617/QR/-X	TRANSISTOR
Q2403	2SD1511/R/-X	TRANSISTOR
Q2501	RN1104FT	TRANSISTOR
Q2502	UMH6N	TRANSISTOR
Q2504	DTA143EE	TRANSISTOR
Q2505	UMH6N	TRANSISTOR
Q2506	2SA1774/QR/-X	TRANSISTOR
Q2507	RN2104FT	TRANSISTOR
Q2509	UMH6N	TRANSISTOR
Q2510	2SC4617/QR/-X	TRANSISTOR
Q2603	2SC4617/QR/-X	TRANSISTOR
Q2604	2SC4617/QR/-X	TRANSISTOR
Q2606	RN1104FT	TRANSISTOR
Q2701	RN1104FT	TRANSISTOR
Q2703	2SC4617/QR/-X	TRANSISTOR
Q2704	2SC4617/QR/-X	TRANSISTOR
Q2705	2SC4617/QR/-X	TRANSISTOR
Q2751	RN1104FT	TRANSISTOR
Q2752	UMT2N	PAIR TRANSISTOR
Q2754	2SC4617/QR/-X	TRANSISTOR
Q2755	UMX1N	PAIR TRANSISTOR
Q2756	2SA1774/QR/-X	TRANSISTOR
Q2757	RN2104FT	TRANSISTOR
Q2758	UMH6N	TRANSISTOR
Q2760	2SC4617/QR/-X	TRANSISTOR
Q3301	2SA1577/QR/-X	TRANSISTOR
Q3302	DAP222	DIODE
Q3501	2SC4226/4/-X	TRANSISTOR
Q3502	2SD1979/S/-X	TRANSISTOR
Q3503	2SD1979/S/-X	TRANSISTOR
Q3504	2SC4226/4/-X	TRANSISTOR
Q3505	2SA1577/QR/-X	TRANSISTOR
Q3506	RN1104FT	TRANSISTOR
Q3703	UMT2N	PAIR TRANSISTOR
Q3704	UMT2N	PAIR TRANSISTOR
Q3705	UMA2N	TRANSISTOR
Q3706	UMH6N	TRANSISTOR
Q3707	UMZ1N	PAIR TRANSISTOR
Q3708	2SA1774/QRS/-X	TRANSISTOR
Q3709	DTC143ZE	TRANSISTOR
Q4301	2SA1774/RS/-X	TRANSISTOR
Q4302	UMT2N	PAIR TRANSISTOR
Q4303	UMZ1N	PAIR TRANSISTOR
Q4304	RN1104FT	TRANSISTOR
Q4305	2SA1577/QR/-X	TRANSISTOR
Q6001	2SJ501	MOS FET
Q6002	2SK1830	MOS FET
Q6003	2SK1830	MOS FET
Q6004	RN1104FT	TRANSISTOR
Q6005	2SJ501	MOS FET
Q6006	2SA1774/RS/-X	TRANSISTOR
Q6007	RN1104FT	TRANSISTOR
Q6008	2SJ347	MOS FET
Q6103	CPH6302	MOS FET
Q6104	CPH6302	MOS FET
Q6105	CPH6302	MOS FET
Q6106	CPH6302	MOS FET
Q6107	CPH6302	MOS FET
Q6108	CPH6302	MOS FET
Q6109	2SA1774/QR/-X	TRANSISTOR
Q6110	2SC4617/QR/-X	TRANSISTOR

REF No.	PART No.	PART NAME, DESCRIPTION	
Q6605	UN9211J	TRANSISTOR	
	or DTC114EE	TRANSISTOR	
Q6607	UN911HJ	TRANSISTOR	
Q6609	DTC144EE	TRANSISTOR	
Q6610	UMS1N	PAIR TRANSISTOR	
Q6611	2SC4617/RS/-X	TRANSISTOR	
Q6612	UMS1N	PAIR TRANSISTOR	
Q6613	2SA1774/RS/-X	TRANSISTOR	
Q6614	XP1211	TRANSISTOR	
Q7602	UMZ1N	PAIR TRANSISTOR	
D1001	DAP222	DIODE	
D1002	SB007W03Q	SB DIODE	
D2501	DAN222	DIODE	
D2502	DAN222	DIODE	
D2503	DAP222	DIODE	
D2751	DAN222	DIODE	
D2752	DA221	DIODE	
D2753	DA221	DIODE	
D2754	DA221	DIODE	
D2755	DA221	DIODE	
D6001	RB715F	SB DIODE	
D6101	F1J2F	SB DIODE	
D6102	F1J2F	SB DIODE	
D6103	F1J2F	SB DIODE	
D6104	SB05-05CP-X	SB DIODE	
D6105	SB05-05CP-X	SB DIODE	
D6106	F1J2F	SB DIODE	
D6107	SFPB-72-W	SB DIODE	
D6108	1SS355	DIODE	
D6109	1SS355	DIODE	
R1001	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1003	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R1004	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R1005	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1006	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1007	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1009	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1010	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1011	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1012	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1013	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1014	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1015	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1016	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1017	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1018	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1019	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1020	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1021	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R1023	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1024	NRVA6AD-103W	CMF RESISTOR	10kΩ,1/16W
R1025	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1026	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1027	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1028	NRSA6AJ-751W	MG RESISTOR	750Ω,1/16W
R1031	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1032	NRSA6AJ-224W	MG RESISTOR	220kΩ,1/16W
R1033	NRSA6AJ-334W	MG RESISTOR	330kΩ,1/16W
R1035	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R1036	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R1037	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R1038	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1039	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1040	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1041	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
	R1042	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1043	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
	R1044	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
	R1045	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
	R1047	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
	R1048	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
	R1049	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
	R1050	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
	R1052	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1053	NRSA6AJ-474W	MG RESISTOR	470kΩ,1/16W
	R1054	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1055	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
	R1056	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
	R1057	NRSA6AJ-751W	MG RESISTOR	750Ω,1/16W
	R1058	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1059	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1060	NRSA6AJ-751W	MG RESISTOR	750Ω,1/16W
	R1061	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
	R1062	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1063	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1064	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1065	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
	R1101	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1102	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
	R1103	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
	R1104	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
	R1105	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1106	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
	R1107	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1108	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
	R1109	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1110	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1111	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
	R1112	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
	R1113	NRSA6AJ-393W	MG RESISTOR	39kΩ,1/16W
	R1114	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
	R1115	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
	R1116	NRSA6AJ-822W	MG RESISTOR	8.2kΩ,1/16W
	R1117	NRSA6AJ-123W	MG RESISTOR	12kΩ,1/16W
	R1403	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1404	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1405	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1406	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1407	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
	R1408	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
	R1409	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1410	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
	R1412	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
	R1413	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
	R1414	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1415	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
	R1418	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1419	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1420	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R1421	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1425	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
	R1426	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1427	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1428	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1429	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1430	NRSA6AJ-753W	MG RESISTOR	75kΩ,1/16W
R1431	NRSA6AJ-334W	MG RESISTOR	330kΩ,1/16W
R1432	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R1433	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1434	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R1435	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1436	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1438	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1439	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1440	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1441	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1442	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1444	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1445	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1446	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1447	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1448	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1449	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1450	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1451	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1452	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1453	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R1454	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1455	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1456	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1458	NRSA6AJ-683W	MG RESISTOR	68kΩ,1/16W
R1459	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1460	NRSA6AJ-683W	MG RESISTOR	68kΩ,1/16W
R1461	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1462	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1464	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R1465	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1466	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R1467	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1468	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1469	NRSA6AJ-221W	MG RESISTOR	220Ω,1/16W
R1470	NRSA6AJ-221W	MG RESISTOR	220Ω,1/16W
R1471	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R1473	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1475	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R1476	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R1477	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2102	NRSA6AJ-100W	MG RESISTOR	10Ω,1/16W
R2108	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R2109	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R2114	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2202	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2203	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω,1/16W
R2204	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω,1/16W
R2205	NRSA6AJ-474W	MG RESISTOR	470kΩ,1/16W
R2206	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2208	NRSA6AJ-392W	MG RESISTOR	3.9kΩ,1/16W
R2210	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R2212	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2220	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R2221	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R2224	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2225	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2226	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2227	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2408	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2409	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2412	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2413	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2415	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2416	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2417	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2418	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2420	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2423	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2426	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2429	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2430	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2501	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2502	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2503	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2504	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2505	NRVA6AD-104W	CMF RESISTOR	100kΩ,1/16W
R2506	NRVA6AD-683W	CMF RESISTOR	68kΩ,1/16W
R2507	NRVA6AD-102W	CMF RESISTOR	1kΩ,1/16W
R2508	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R2509	NRVA6AD-104W	CMF RESISTOR	100kΩ,1/16W
R2510	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R2512	NRVA6AD-273W	CMF RESISTOR	27kΩ,1/16W
R2513	NRVA6AD-333W	CMF RESISTOR	33kΩ,1/16W
R2514	NRVA6AD-332W	CMF RESISTOR	3.3kΩ,1/16W
R2515	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2516	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2517	NRVA6AD-273W	CMF RESISTOR	27kΩ,1/16W
R2518	NRVA6AD-104W	CMF RESISTOR	100kΩ,1/16W
R2519	NRVA6AD-273W	CMF RESISTOR	27kΩ,1/16W
R2520	NRSA6AJ-394W	MG RESISTOR	390kΩ,1/16W
R2521	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R2522	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2523	NRSA6AJ-224W	MG RESISTOR	220kΩ,1/16W
R2524	NRSA6AJ-155W	MG RESISTOR	1.5MΩ,1/16W
R2525	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R2526	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R2601	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R2602	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R2603	NRSA6AJ-123W	MG RESISTOR	12kΩ,1/16W
R2604	NRSA6AJ-123W	MG RESISTOR	12kΩ,1/16W
R2607	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2608	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2609	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R2610	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R2611	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2612	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2613	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2614	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2615	NRSA6AJ-682W	MG RESISTOR	6.8kΩ,1/16W
R2616	NRSA6AJ-682W	MG RESISTOR	6.8kΩ,1/16W
R2619	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2620	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2621	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2622	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R2623	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω,1/16W
R2624	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω,1/16W
R2625	NRSA6AJ-561W	MG RESISTOR	560Ω,1/16W

REF No.	PART No.	PART NAME, DESCRIPTION	
R2626	NRSA6AJ-561W	MG RESISTOR	560Ω,1/16W
R2627	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2628	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2629	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R2630	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R2631	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2632	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2633	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2634	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2638	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2640	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R2642	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R2701	NRSA6AJ-151W	MG RESISTOR	150Ω,1/16W
R2702	NRSA6AJ-100W	MG RESISTOR	10Ω,1/16W
R2705	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2706	NRSA6AJ-104W	MG RESISTOR	15kΩ,1/16W
R2709	NRSA6AJ-221W	MG RESISTOR	220Ω,1/16W
R2710	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R2711	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2712	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2713	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R2714	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R2717	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2719	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2721	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R2722	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2751	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2752	NRSA6AJ-820W	MG RESISTOR	82Ω,1/16W
R2753	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R2754	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R2755	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R2756	NRSA6AJ-332W	MG RESISTOR	3.3kΩ,1/16W
R2757	NRSA6AJ-564W	MG RESISTOR	560kΩ,1/16W
R2758	NRSA6AJ-564W	MG RESISTOR	560kΩ,1/16W
R2759	NRSA6AJ-821W	MG RESISTOR	820Ω,1/16W
R2760	NRSA6AJ-821W	MG RESISTOR	820Ω,1/16W
R2761	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2764	NRSA6AJ-182W	MG RESISTOR	1.8kΩ,1/16W
R2766	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2767	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R2768	NRSA6AJ-564W	MG RESISTOR	560kΩ,1/16W
R2769	NRSA6AJ-152W	MG RESISTOR	1.5kΩ,1/16W
R2770	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R2771	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2772	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2773	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R2774	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3002	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R3004	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3005	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3006	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3007	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3032	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3048	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3050	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3051	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3052	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R3054	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R3056	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R3057	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R3058	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3059	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R3060	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R3061	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3062	NRSA6AJ-124W	MG RESISTOR	120kΩ,1/16W
R3063	NRSA6AJ-124W	MG RESISTOR	120kΩ,1/16W
R3101	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R3102	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3103	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R3106	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R3113	NRSA6AJ-394W	MG RESISTOR	390kΩ,1/16W
R3115	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R3117	NRSA6AJ-560W	MG RESISTOR	56Ω,1/16W
R3118	NRSA6AJ-560W	MG RESISTOR	56Ω,1/16W
R3119	NRSA6AJ-560W	MG RESISTOR	56Ω,1/16W
R3120	NRSA6AJ-560W	MG RESISTOR	56Ω,1/16W
R3121	NRSA6AJ-512W	MG RESISTOR	5.1kΩ,1/16W
R3128	NRSA6AJ-512W	MG RESISTOR	5.1kΩ,1/16W
R3201	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3202	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3211	NRSA6AJ-272W	MG RESISTOR	2.7kΩ,1/16W
R3212	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3213	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3214	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3215	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3221	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R3224	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R3233	NRVA6AD-222W	CMF RESISTOR	2.2kΩ,1/16W
R3234	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3301	NRSA6AJ-391W	MG RESISTOR	390Ω,1/16W
R3303	NRSA6AJ-391W	MG RESISTOR	390Ω,1/16W
R3304	NRSA6AJ-121W	MG RESISTOR	120Ω,1/16W
R3307	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3308	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3312	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3313	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3315	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R3316	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3317	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R3318	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3330	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3331	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R3332	NRSA6AJ-823W	MG RESISTOR	82kΩ,1/16W
R3333	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R3334	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3335	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3336	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3337	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R3338	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3339	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3341	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R3342	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3343	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3344	NRSA6AJ-823W	MG RESISTOR	82kΩ,1/16W
R3345	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R3346	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R3347	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3348	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R3349	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R3350	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R3351	NRVA6AD-101W	CMF RESISTOR	100Ω,1/16W
R3352	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3354	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3357	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3361	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3362	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R3363	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3364	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3366	NRSA6AJ-562W	MG RESISTOR	5.6kΩ,1/16W
R3367	NRSA6AJ-152W	MG RESISTOR	1.5kΩ,1/16W
R3379	NRSA6AJ-822W	MG RESISTOR	8.2kΩ,1/16W
R3380	NRSA6AJ-822W	MG RESISTOR	8.2kΩ,1/16W
R3382	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3383	NRSA6AJ-392W	MG RESISTOR	3.9kΩ,1/16W
R3502	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3504	NRSA6AJ-152W	MG RESISTOR	1.5kΩ,1/16W
R3505	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3506	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R3507	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3508	NRSA6AJ-272W	MG RESISTOR	2.7kΩ,1/16W
R3509	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R3510	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3511	NRSA6AJ-152W	MG RESISTOR	1.5kΩ,1/16W
R3512	NRSA6AJ-123W	MG RESISTOR	12kΩ,1/16W
R3513	NRSA6AJ-680W	MG RESISTOR	68Ω,1/16W
R3514	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3515	NRSA6AJ-181W	MG RESISTOR	180Ω,1/16W
R3516	NRSA6AJ-181W	MG RESISTOR	180Ω,1/16W
R3517	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R3518	NRSA6AJ-680W	MG RESISTOR	68Ω,1/16W
R3519	NRSA6AJ-123W	MG RESISTOR	12kΩ,1/16W
R3520	NRSA6AJ-152W	MG RESISTOR	1.5kΩ,1/16W
R3521	NRSA6AJ-100W	MG RESISTOR	10Ω,1/16W
R3523	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3524	NRSA6AJ-392W	MG RESISTOR	3.9kΩ,1/16W
R3550	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3703	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3704	NRSA6AJ-224W	MG RESISTOR	220kΩ,1/16W
R3705	NRSA6AJ-121W	MG RESISTOR	120Ω,1/16W
R3706	NRSA6AJ-225W	MG RESISTOR	2.2MΩ,1/16W
R3707	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3708	NRSA6AJ-121W	MG RESISTOR	120Ω,1/16W
R3709	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3712	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R3721	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R3722	NRSA6AJ-100W	MG RESISTOR	10Ω,1/16W
R3723	NRSA6AJ-100W	MG RESISTOR	10Ω,1/16W
R3724	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3725	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R3726	NRSA6AJ-821W	MG RESISTOR	820Ω,1/16W
R3727	NRSA6AJ-821W	MG RESISTOR	820Ω,1/16W
R3731	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R3732	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R4203	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4204	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4301	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R4303	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4304	NRSA6AJ-272W	MG RESISTOR	2.7kΩ,1/16W
R4305	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R4306	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4307	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R4308	NRSA6AJ-151W	MG RESISTOR	150Ω,1/16W
R4309	NRSA6AJ-822W	MG RESISTOR	8.2kΩ,1/16W
R4310	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4311	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R4312	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4313	NRSA6AJ-562W	MG RESISTOR	5.6kΩ,1/16W
R4314	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4315	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R4316	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R4317	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R4318	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R4319	NRSA6AJ-271W	MG RESISTOR	270Ω,1/16W
R4320	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R4321	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R4322	NRSA6AJ-331W	MG RESISTOR	330Ω,1/16W
R4323	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4324	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4325	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R4326	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R4329	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6001	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R6002	NRVA6AD-183W	CMF RESISTOR	18kΩ,1/16W
R6003	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R6004	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R6005	NRVA6AD-104W	CMF RESISTOR	100kΩ,1/16W
R6007	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R6008	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
R6009	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R6010	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R6011	NRVA6AD-473W	CMF RESISTOR	47kΩ,1/16W
R6012	NRVA6AD-823W	CMF RESISTOR	82kΩ,1/16W
R6014	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R6016	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R6017	NRSA6AJ-562W	MG RESISTOR	5.6kΩ,1/16W
R6018	NRSA6AJ-224W	MG RESISTOR	220kΩ,1/16W
R6101	NRVA6AD-822W	CMF RESISTOR	8.2kΩ,1/16W
R6102	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R6103	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R6104	NRVA63D-114X	CMF RESISTOR	110kΩ,1/16W
R6105	NRVA63D-104X	CMF RESISTOR	100kΩ,1/16W
R6107	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6108	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6109	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R6110	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6111	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6112	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R6114	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6115	NRSA6AJ-682W	MG RESISTOR	6.8kΩ,1/16W
R6116	NRSA6AJ-133W	MG RESISTOR	13kΩ,1/16W
R6117	NRSA6AJ-363W	MG RESISTOR	36kΩ,1/16W
R6118	NRSA6AJ-682W	MG RESISTOR	6.8kΩ,1/16W
R6119	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R6120	NRSA6AJ-823W	MG RESISTOR	82kΩ,1/16W
R6121	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R6122	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R6123	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R6124	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω,1/16W
R6125	NRVA6AD-363W	CMF RESISTOR	36kΩ,1/16W
R6126	NRVA6AD-562W	CMF RESISTOR	5.6kΩ,1/16W
R6127	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω,1/16W
R6128	NRVA6AD-473W	CMF RESISTOR	47kΩ,1/16W
R6129	NRVA6AD-562W	CMF RESISTOR	5.6kΩ,1/16W
R6130	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω,1/16W

REF No.	PART No.	PART NAME, DESCRIPTION	
R6131	NRVA6AD-243W	CMF RESISTOR	24kΩ,1/16W
R6132	NRVA6AD-622W	CMF RESISTOR	6.2kΩ,1/16W
R6133	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6134	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω,1/16W
R6135	NRVA6AD-512W	CMF RESISTOR	5.1kΩ,1/16W
R6136	NRVA6AD-753W	CMF RESISTOR	75kΩ,1/16W
R6137	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6138	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω,1/16W
R6139	NRVA6AD-123W	CMF RESISTOR	12kΩ,1/16W
R6140	NRVA6AD-103W	CMF RESISTOR	10kΩ,1/16W
R6141	NRVA6AD-222W	CMF RESISTOR	2.2kΩ,1/16W
R6142	NRVA6AD-822W	CMF RESISTOR	8.2kΩ,1/16W
R6143	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6144	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω,1/16W
R6145	NRVA6AD-223W	CMF RESISTOR	22kΩ,1/16W
R6146	NRVA6AD-113W	CMF RESISTOR	11kΩ,1/16W
R6147	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6150	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6152	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6154	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R6603	NRSA6AJ-822W	MG RESISTOR	8.2kΩ,1/16W
R6609	NRVA6AD-683W	CMF RESISTOR	68kΩ,1/16W
R6610	NRVA6AD-104W	CMF RESISTOR	100kΩ,1/16W
R6612	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R6613	NRSA6AJ-335W	MG RESISTOR	3.3MΩ,1/16W
R6617	NRSA6AJ-684W	MG RESISTOR	680kΩ,1/16W
R6621	NRSA6AJ-184W	MG RESISTOR	180kΩ,1/16W
R6622	NRSA6AJ-823W	MG RESISTOR	82kΩ,1/16W
R6623	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R6625	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R6626	NRSA6AJ-474W	MG RESISTOR	470kΩ,1/16W
R7601	NRVA6AD-822W	CMF RESISTOR	8.2kΩ,1/16W
R7602	NRVA63D-334X	CMF RESISTOR	330kΩ,1/16W
R7603	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7604	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R7606	NRVA6AD-333W	CMF RESISTOR	33kΩ,1/16W
R7607	NRVA6AD-332W	CMF RESISTOR	3.3kΩ,1/16W
R7608	NRVA6AD-561W	CMF RESISTOR	560Ω,1/16W
R7609	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7617	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7620	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7622	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7623	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
RA1001	NRZ0034-102W	NETWORK RESISTOR	1kΩ
RA1002	NRZ0034-102W	NETWORK RESISTOR	1kΩ
RA1003	NRZ0034-104W	NETWORK RESISTOR	100kΩ
RA1004	NRZ0034-104W	NETWORK RESISTOR	100kΩ
RA1005	NRZ0034-102W	NETWORK RESISTOR	1kΩ
RA1006	NRZ0034-102W	NETWORK RESISTOR	1kΩ
RA1401	NRZ0034-473W	NETWORK RESISTOR	47kΩ
RA1402	NRZ0034-102W	NETWORK RESISTOR	1kΩ
RA1403	NRZ0034-102W	NETWORK RESISTOR	1kΩ
RA4301	NRZ0034-101W	NETWORK RESISTOR	100Ω
RA4302	NRZ0034-101W	NETWORK RESISTOR	100Ω
RA4303	NRZ0034-101W	NETWORK RESISTOR	100Ω
RA4304	NRZ0034-101W	NETWORK RESISTOR	100Ω
C1003	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1004	NCBA1EK-472W	CAPACITOR	0.0047µF,25V
C1005	NDCA1HJ-330W	CAPACITOR	33pF,50V
C1006	NDCA1HJ-150W	CAPACITOR	15pF,50V
C1008	NCBA1CK-103W	CAPACITOR	0.01µF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1009	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1010	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1011	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1012	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1013	NDCA1HJ-100W	CAPACITOR	13pF,50V
C1015	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1016	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1017	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1018	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1019	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1020	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1021	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1022	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1023	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1024	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1025	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1031	NBE91CM-105X	T CAPACITOR	1µF,16V
C1032	NBM90JM-226X	T CAPACITOR	22µF,6.3V
C1033	NBM90JM-226X	T CAPACITOR	22µF,6.3V
C1034	NBE21AM-106X	T CAPACITOR	10µF,10V
C1101	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1102	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1103	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1105	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1106	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1107	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1108	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1111	NBE91AM-335X	T CAPACITOR	3.3µF,10V
C1112	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C1401	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1402	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1414	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1415	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1416	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1417	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C1418	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C1419	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C1420	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1421	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1422	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1423	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1424	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C1425	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C2101	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C2102	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C2103	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C2104	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C2105	NBE90JM-475X	T CAPACITOR	4.7µF,6.3V
C2106	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C2107	NCB30JK-105X	CAPACITOR	1µF,6.3V
C2108	NCB30JK-105X	CAPACITOR	1µF,6.3V
C2109	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C2110	NCBA1HK-222W	CAPACITOR	0.0022µF,50V
C2111	NCBA1HK-222W	CAPACITOR	0.0022µF,50V
C2112	NBE90JM-475X	T CAPACITOR	4.7µF,6.3V
C2113	NBE90JM-475X	T CAPACITOR	4.7µF,6.3V
C2114	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C2115	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C2203	NBE90JM-475X	T CAPACITOR	4.7µF,6.3V
C2204	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C2207	NCBA1AK-104W	CAPACITOR	0.1µF,10V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C2208	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C2210	NBE40JM-476X	T CAPACITOR	47µF,6.3V
		C2212	NBE80JM-106X	T CAPACITOR	10µF,6.3V
		C2214	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2215	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2216	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C2217	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C2220	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C2221	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C2224	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2407	NBE40JM-476X	T CAPACITOR	47µF,6.3V
		C2413	NBEE0JM-476X	T CAPACITOR	47µF,6.3V
		C2501	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C2502	NCBA1EK-472W	CAPACITOR	0.0047µF,25V
		C2503	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C2505	NCB30JK-474X	CAPACITOR	0.47µF,6.3V
		C2506	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C2508	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C2509	NBE91AM-335X	T CAPACITOR	3.3µF,10V
		C2510	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C2603	NCB31CK-273X	CAPACITOR	0.027µF,16V
		C2604	NCB31CK-273X	CAPACITOR	0.027µF,16V
		C2605	NCBA1HK-152W	CAPACITOR	0.0015µF,50V
		C2606	NCBA1HK-152W	CAPACITOR	0.0015µF,50V
		C2611	NCB31CK-273X	CAPACITOR	0.027µF,16V
		C2612	NCB31CK-273X	CAPACITOR	0.027µF,16V
		C2613	NCBA1HK-332W	CAPACITOR	0.0033µF,50V
		C2614	NCBA1HK-332W	CAPACITOR	0.0033µF,50V
		C2617	NCB31CK-473X	CAPACITOR	0.047µF,16V
		C2618	NCB31CK-473X	CAPACITOR	0.047µF,16V
		C2621	NBE90JM-475X	T CAPACITOR	4.7µF,6.3V
		C2622	NBE90JM-475X	T CAPACITOR	4.7µF,6.3V
		C2623	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		C2624	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		C2625	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2626	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2629	NBEE0JM-476X	T CAPACITOR	47µF,6.3V
		C2631	NCB31EK-103X	CAPACITOR	0.01µF,25V
		C2632	NCB31EK-103X	CAPACITOR	0.01µF,25V
		C2635	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C2636	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C2639	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2640	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2702	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C2703	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C2705	NCBA1EK-682W	CAPACITOR	0.0068µF,25V
		C2708	NCBA1HK-332W	CAPACITOR	0.0033µF,50V
		C2751	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C2752	PECA1172	T CAPACITOR	47µF,6.3V
		C2753	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
		C2754	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
		C2758	NBE21AM-106X	T CAPACITOR	10µF,10V
		C2762	NCF31AZ-105X	CAPACITOR	1µF,10V
		C2763	NBE40JM-476X	T CAPACITOR	47µF,6.3V
		C2764	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
		C2765	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
		C3001	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3002	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3003	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3004	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3006	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3009	NDCA1HJ-120W	CAPACITOR	12pF,50V
		C3010	NDCA1HJ-120W	CAPACITOR	12pF,50V
		C3011	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3012	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3022	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3023	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3027	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3028	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3035	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3037	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3038	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3040	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3041	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3042	NCB30JK-474X	CAPACITOR	0.47µF,6.3V
		C3047	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3048	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3049	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C3050	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3101	NDCA1EJ-271W	CAPACITOR	270pF,25V
		C3102	NCB21AK-105X	CAPACITOR	1µF,10V
		C3103	NCF31AZ-105X	CAPACITOR	1µF,10V
		C3104	NCF31AZ-105X	CAPACITOR	1µF,10V
		C3105	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3106	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3107	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3108	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3109	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C3110	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		C3203	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3204	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3205	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3207	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3208	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3212	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3213	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3214	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3215	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3217	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3218	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3219	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3220	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3221	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3222	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3223	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3224	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3227	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3228	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3229	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3230	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3301	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3302	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3303	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3304	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3305	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3306	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3307	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3308	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3309	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3310	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3311	NDCA1HJ-151W	CAPACITOR	150pF,50V
		C3312	NCBA1CK-103W	CAPACITOR	0.01µF,16V

REF No.	PART No.	PART NAME, DESCRIPTION	
C3313	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3314	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C3316	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C3317	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3318	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3319	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C3320	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
C3321	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3322	NCBA1AK-683W	CAPACITOR	0.068µF,10V
C3323	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
C3324	NCBA1AK-333W	CAPACITOR	0.033µF,10V
C3326	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C3331	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C3332	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C3333	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C3334	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3335	NDCA1HJ-100W	CAPACITOR	10pF,50V
C3336	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C3337	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3401	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3402	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C3404	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C3501	NCBA1HK-122W	CAPACITOR	0.0012µF,50V
C3502	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3503	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C3504	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3505	NDCA1HJ-470W	CAPACITOR	47pF,50V
C3506	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3507	NCBA1HK-681W	CAPACITOR	680pF,50V
C3508	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3509	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3510	NCB30JK-105X	CAPACITOR	1µF,6.3V
C3511	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3512	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3513	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3514	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3515	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3516	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3517	NCBA1HK-152W	CAPACITOR	0.0015µF,50V
C3518	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3519	NDCA1HJ-330W	CAPACITOR	33pF,50V
C3520	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3521	NDCA1HJ-220W	CAPACITOR	22pF,50V
C3522	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3523	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3524	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3525	NDCA1HJ-220W	CAPACITOR	22pF,50V
C3526	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3527	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3528	NDCA1HJ-330W	CAPACITOR	33pF,50V
C3529	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3530	NCBA1HK-152W	CAPACITOR	0.0015µF,50V
C3531	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3532	NBEE0JM-476X	T CAPACITOR	47µF,6.3V
C3533	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3554	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3701	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C3702	NBEE0JM-226X	T CAPACITOR	22µF,6.3V
C3704	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C3705	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C3706	NBE90JM-106X	T CAPACITOR	10µF,6.3V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C3707	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3708	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3709	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3710	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C3711	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3712	NCBA1CK-103W	CAPACITOR	0.01µF,16V
		C3713	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C3718	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C3719	NCB30JK-105X	CAPACITOR	1µF,6.3V
		C3720	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C4201	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4202	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C4203	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4204	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C4205	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4206	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C4207	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4208	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4209	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4210	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4301	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4302	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4303	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4304	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4305	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C4306	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4308	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4309	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4310	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C4311	NBM90JM-226X	T CAPACITOR	22µF,6.3V
		C4312	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4313	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4314	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C4315	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4316	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4317	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4318	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4319	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4320	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4321	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4322	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4323	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4324	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4325	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4326	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4327	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4328	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4329	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4330	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4331	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4332	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4333	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4334	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4335	NBE90JM-106X	T CAPACITOR	10µF,6.3V
		C4336	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C4337	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C6001	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C6002	NCB31EK-103X	CAPACITOR	0.01µF,25V
		C6004	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C6005	NBM90JM-226X	T CAPACITOR	22µF,6.3V
		C6006	NBP41CM-106X	T CAPACITOR	10µF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C6007	NCF21CZ-105X	CAPACITOR	1µF,16V
C6008	PECA1173	T CAPACITOR	100µF,4V
C6009	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6010	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6101	NCB21AK-105X	CAPACITOR	1µF,10V
C6102	NCB21AK-105X	CAPACITOR	1µF,10V
C6103	NCB21AK-105X	CAPACITOR	1µF,10V
C6104	NBP41CM-106X	T CAPACITOR	10µF,16V
C6106	NDCA1HJ-121W	CAPACITOR	120pF,50V
C6107	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C6108	NCB31AK-224X	CAPACITOR	0.22µF,10V
C6109	NCB31AK-224X	CAPACITOR	0.22µF,10V
C6110	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C6111	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C6112	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C6113	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C6114	NCB21AK-105X	CAPACITOR	1µF,10V
C6116	NCBA1EK-562W	CAPACITOR	0.0056µF,25V
C6118	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C6120	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C6122	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C6123	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6124	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6125	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
C6127	NCB21AK-105X	CAPACITOR	1µF,10V
C6128	NDCA1HJ-6R0W	CAPACITOR	6pF,50V
C6131	NCB21AK-105X	CAPACITOR	1µF,10V
C6132	NBE21AM-106X	T CAPACITOR	10µF,10V
C6133	NCB21AK-105X	CAPACITOR	1µF,10V
C6134	NCB11AK-225X	CAPACITOR	2.2µF,10V
C6135	NCB21AK-105X	CAPACITOR	1µF,10V
C6136	NBE41AM-226X	T CAPACITOR	22µF,10V
C6137	NCB31AK-224X	CAPACITOR	0.22µF,10V
C6138	NCB31AK-224X	CAPACITOR	0.22µF,10V
C6139	NDCA1HJ-330W	CAPACITOR	33pF,50V
C6140	NDCA1HJ-330W	CAPACITOR	33pF,50V
C6143	NCBA1HK-471W	CAPACITOR	470pF,50V
C6144	NCBA1HK-152W	CAPACITOR	0.0015µF,50V
C6146	NCBA1HK-221W	CAPACITOR	220pF,50V
C6147	NCB21AK-105X	CAPACITOR	1µF,10V
C6149	NCB11AK-475X	CAPACITOR	4.7µF,10V
C6150	NCB11AK-225X	CAPACITOR	2.2µF,10V
C6151	NCB21AK-105X	CAPACITOR	1µF,10V
C6152	NCB21AK-105X	CAPACITOR	1µF,10V
C6153	NCB11CK-105X	CAPACITOR	1µF,16V
C6154	NCB21AK-105X	CAPACITOR	1µF,10V
C6156	NCB21AK-105X	CAPACITOR	1µF,10V
C6157	NBP21DM-475X	T CAPACITOR	4.7µF,20V
C6159	NCB21AK-105X	CAPACITOR	1µF,10V
C6160	NCB11AK-475X	CAPACITOR	4.7µF,10V
C6161	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
C6162	NCB21AK-105X	CAPACITOR	1µF,10V
C6163	NCB11AK-475X	CAPACITOR	4.7µF,10V
C6164	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
C6165	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
C6168	NBG41AM-106X	T CAPACITOR	10µF,10V
C6169	NBG41AM-106X	T CAPACITOR	10µF,10V
C6171	NCB21AK-105X	CAPACITOR	1µF,10V
C6604	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C6605	NCBA1AK-473W	CAPACITOR	0.047µF,10V
C6609	NCBA1AK-473W	CAPACITOR	0.047µF,10V
C6610	NDCA1EJ-221W	CAPACITOR	220pF,25V
C6611	NDCA1EJ-121W	CAPACITOR	120pF,25V
C6612	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C6613	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C7601	NBE21AM-106X	T CAPACITOR	10µF,10V
C7602	NCB11CK-105X	CAPACITOR	1µF,16V
C7604	NBE91CM-105X	T CAPACITOR	1µF,16V
C7605	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7606	NCB31AK-224X	CAPACITOR	0.22µF,10V
C7607	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C7608	NBP51EM-106X	T CAPACITOR	10µF,25V
C7610	NCB31CK-104X	CAPACITOR	0.1µF,16V
L1001	NQL315K-220X	COIL	22µH
L1002	NQL315K-220X	COIL	22µH
L1003	NQL315K-220X	COIL	22µH
L1004	NQL315K-100X	COIL	10µH
L1005	NQL184J-390X	COIL	39µH
L1401	NQL045K-100X	COIL	10µH
L2101	NQL315K-100X	COIL	10µH
L2601	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L2602	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L2603	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L3001	NQR0305-001X	FERRITE BEAD	
L3002	NQR0305-001X	FERRITE BEAD	
L3004	NQR0305-001X	FERRITE BEAD	
L3101	NQR0305-001X	FERRITE BEAD	
L3102	NQR0006-001X	FERRITE BEAD	
L3202	NQR0006-001X	FERRITE BEAD	
L3203	NQR0006-001X	FERRITE BEAD	
L3204	NQR0305-001X	FERRITE BEAD	
L3301	NQR0006-001X	FERRITE BEAD	
L3302	NQL04DK-100X	COIL	10µH
L3303	NQL04DK-100X	COIL	10µH
L3305	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
L3401	NQR0006-001X	FERRITE BEAD	
L3402	NQR0305-001X	FERRITE BEAD	
L3501	NQL302N-100X	COIL	10µH
L3502	NQL302N-100X	COIL	10µH
L3503	NQL085J-220X	COIL	22µH
L3504	NQL085J-220X	COIL	22µH
L3505	NQL302N-100X	COIL	10µH
L3506	NQL302N-100X	COIL	10µH
L3701	NQL302N-100X	COIL	10µH
L4201	NQR0305-001X	FERRITE BEAD	
L4202	NQL302N-100X	COIL	10µH
L4301	NQR0305-001X	FERRITE BEAD	
L4302	NQR0305-001X	FERRITE BEAD	
L4303	NQL302N-100X	COIL	10µH
L4304	NQL04DK-220X	COIL	22µH
L4305	NQR0305-001X	FERRITE BEAD	
L6001	NQL315K-220X	COIL	22µH
L6101	NQL32CM-100X	COIL	10µH
L6102	NQL32CM-100X	COIL	10µH
L6103	NQL32CM-100X	COIL	10µH
L6104	NQL32CM-220X	COIL	22µH
L6105	NQL32CM-220X	COIL	22µH
L6106	NQL32CM-150X	COIL	15µH
L6107	NQL35BK-100X	COIL	10µH
L6108	NQL315K-100X	COIL	10µH
L6110	NQL32CM-100X	COIL	10µH
L6111	NQL32CM-100X	COIL	10µH

REF No.	PART No.	PART NAME, DESCRIPTION	
L6112	NQL32CM-100X	COIL	10µH
L6113	NQL32CM-100X	COIL	10µH
L6114	NQL32CM-100X	COIL	10µH
L6117	NQL315K-100X	COIL	10µH
L6604	NQL315K-100X	COIL	10µH
L7601	NQL315K-220X	COIL	22µH
L7602	NQL315K-100X	COIL	10µH
L7603	NQL315K-220X	COIL	22µH
X1001	NAX0279-001X	C OSCILLATOR	
X1002	NAX0267-001X	CRYSTAL RESONATOR	
X3001	NAX0284-001X	CRYSTAL RESONATOR	
X3301	NAX0296-001X	C OSCILLATOR	
S1001	NSW0071-001X	DETECT SWITCH	
T6101	NQS0038-001X	SW TRANSF	
J1	YU40017-030-3	THIN WIRE	
J2	YU40017-045-1	THIN WIRE	
TB1	LY31117-001B	BATT.TERM.UNIT	
J3101	QNZ0126-001	D CONNECTOR	
CN1001	QGF0513F1-08X	FPC CONNECTOR	
CN1002	QGB0503M1-80X	CONNECTOR	
CN1003	QGB0503M1-30X	CONNECTOR	
CN1004	QGA1001F1-06X	CONNECTOR	
CN1005	QGF0513F2-06X	FPC CONNECTOR	
CN1006	QGF0513F1-22X	FPC CONNECTOR	
CN1007	QGF0301F1-39X	FPC CONNECTOR	
CN1010	QGB0506L1-20X	CONNECTOR	
CN1011	QGF0507F1-12X	FPC CONNECTOR	
CN1013	PEMC1125-003-P	CONNECTOR	
CN1014	QGF0301F1-33X	FPC CONNECTOR	
CN1015	QGF0510F2-08X	FPC CONNECTOR	
CN1016	QGB0503M1-80X	CONNECTOR	
F1	NMFZ006-2R0X-K	FUSE	T2.0A
F2	NMFZ006-2R0X-K	FUSE	T2.0A
F3	NMFZ006-2R0X-K	FUSE	T2.0A
F4	NMFZ006-R20X-K	FUSE	T0.2A
F5	NMFZ006-R50X-K	FUSE	T0.5A
F6	NMFZ006-R50X-K	FUSE	T0.5A
F7	NMFZ006-R50X-K	FUSE	T0.5A
SD1	LY31116-001A	SHIELD CASE	
SD2	LY41602-001A	SHIELD(DSP)	
OT1	LY30016-0T8B	SPACER-A	
OT2	LY30016-0T9A	SPACER-A	
OT3	LY41433-001B	S.SHEET(DC/DC)	

–SUB BOARD ASSEMBLY–

REF No.	PART No.	PART NAME, DESCRIPTION
PW	YB20442L	SUB BOARD ASSY
C3015	NBG40GM-226X	T CAPACITOR
WR1	YU40017-015-2	THIN WIRE
WR2	YU40017-015-3	THIN WIRE

****

MDA BOARD ASSEMBLY <02>

REF No.	PART No.	PART NAME, DESCRIPTION
PW1	YB10246A1-01	MDA BOARD ASSY
IC1601	BA6865KV	IC
IC1602	BA6254FS	TR ARRAY
IC1603	BA6254FS	TR ARRAY

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
IC1801	RS-171-X	IC(PHOTO SENSOR	
IC1901	RPM851A	IC	
IC1902	TC7SH08FU	IC(DIGITAL)	
IC4802	TA75W01FU	IC	
IC4803	TA75W01FU	IC	
IC4804	NJM3414AV	IC	
IC4805	MM6564XFBE	IC	
IC4806	TC7W00FK	IC	
IC4807	TC7W66FK	IC	
IC4851	UPD16835G3	IC	
Q1601	UMC3N	TRANSISTOR	
Q1801	DTC143XE	TRANSISTOR	
Q4801	2SC4655/BC/-X	TRANSISTOR	
Q4802	2SC4617/RS/-X	TRANSISTOR	
Q4803	DTC144EE	TRANSISTOR	
Q4804	DTA144EE	TRANSISTOR	
Q4852	2SC4617/RS/-X	TRANSISTOR	
D1602	DAP222	DIODE	
D1603	DAP222	DIODE	
D1604	DAP222	DIODE	
D1801	TLSU1002/LM/-X	LE DIODE	
R1601	NRSA6AJ-681W	MG RESISTOR	680Ω,1/16W
R1602	NRSA6AJ-124W	MG RESISTOR	120kΩ,1/16W
R1603	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R1604	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R1605	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R1606	NRV142F-R22X	CMF RESISTOR	0.22Ω,1/4W
R1609	NRS12BK-R68W	MG RESISTOR	0.68Ω,1/2W
R1610	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1611	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R1612	NRSA6AJ-274W	MG RESISTOR	270kΩ,1/16W
R1613	NRSA6AJ-272W	MG RESISTOR	2.7kΩ,1/16W
R1614	NRSA6AJ-154W	MG RESISTOR	150kΩ,1/16W
R1615	NRSA6AJ-474W	MG RESISTOR	470kΩ,1/16W
R1616	NRVA6AD-202W	CMF RESISTOR	2kΩ,1/16W
R1617	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R1618	NRSA6AJ-203W	MG RESISTOR	20kΩ,1/16W
R1619	NRSA6AJ-393W	MG RESISTOR	39kΩ,1/16W
R1620	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R1621	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R1622	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R1623	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R1625	NRSA6AJ-511W	MG RESISTOR	510Ω,1/16W
R1626	NRSA6AJ-511W	MG RESISTOR	510Ω,1/16W
R1627	NRSA6AJ-511W	MG RESISTOR	510Ω,1/16W
R1628	NRSA6AJ-511W	MG RESISTOR	510Ω,1/16W
R1629	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R1630	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1631	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1635	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R1636	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R1637	NRSA6AJ-124W	MG RESISTOR	120kΩ,1/16W
R1642	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R1801	NRSA6AJ-391W	MG RESISTOR	390Ω,1/16W
R1802	NRSA6AJ-470W	MG RESISTOR	47Ω,1/16W
R1901	NRSA6AJ-271W	MG RESISTOR	270Ω,1/16W
R1902	NRSA6AJ-330W	MG RESISTOR	33Ω,1/16W
R1903	NRSA6AJ-330W	MG RESISTOR	33Ω,1/16W
R1904	NRSA6AJ-330W	MG RESISTOR	33Ω,1/16W
R1905	NRSA6AJ-330W	MG RESISTOR	33Ω,1/16W
R1906	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1908	NRSA6AJ-470W	MG RESISTOR	47Ω,1/16W
R1909	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4805	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4806	NRSA6AJ-683W	MG RESISTOR	68kΩ,1/16W
R4807	NRSA6AJ-823W	MG RESISTOR	82kΩ,1/16W
R4808	NRSA6AJ-243W	MG RESISTOR	24kΩ,1/16W
R4809	NRSA6AJ-681W	MG RESISTOR	680Ω,1/16W
R4810	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4811	NRSA6AJ-824W	MG RESISTOR	820kΩ,1/16W
R4812	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R4814	NRSA6AJ-105W	MG RESISTOR	1MΩ,1/16W
R4815	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R4816	NRSA6AJ-185W	MG RESISTOR	1.8MΩ,1/16W
R4819	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4820	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R4821	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R4822	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R4823	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4824	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R4825	NRSA6AJ-183W	MG RESISTOR	18kΩ,1/16W
R4826	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R4828	NRSA6AJ-122W	MG RESISTOR	1.2kΩ,1/16W
R4829	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4831	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R4832	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4833	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R4834	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4835	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R4836	NRSA6AJ-681W	MG RESISTOR	680Ω,1/16W
R4837	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4839	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4840	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4841	NRSA6AJ-564W	MG RESISTOR	560kΩ,1/16W
R4844	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4846	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4850	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R4854	NRSA6AJ-202W	MG RESISTOR	2kΩ,1/16W
R4855	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R4856	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4857	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4858	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R4859	NRSA6AJ-333W	MG RESISTOR	33kΩ,1/16W
R4860	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4861	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R4862	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4863	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4864	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4865	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4866	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4867	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R4868	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4870	NRSA6AJ-271W	MG RESISTOR	270Ω,1/16W
R4871	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R4874	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
C1601	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1602	NBE21AM-106X	T CAPACITOR	10µF,10V
C1603	NBE21AM-106X	T CAPACITOR	10µF,10V
C1605	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C1606	NCBA1HK-152W	CAPACITOR	0.0015µF,50V
C1607	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1608	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1609	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1610	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1611	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1612	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1613	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C1614	NBP41CM-106X	T CAPACITOR	10µF,16V
C1615	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C1616	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C1617	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C1618	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1619	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1620	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1621	NCB21AK-105X	CAPACITOR	1µF,10V
C1622	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1623	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1625	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1626	NCBA1CK-223W	CAPACITOR	0.022µF,16V
C1627	NCBA1AK-473W	CAPACITOR	0.047µF,10V
C1628	NCB21EK-104X	CAPACITOR	0.1µF,25V
C1632	NBE21AM-106X	T CAPACITOR	10µF,10V
C1633	NCF21CZ-684X	CAPACITOR	0.68µF,16V
C1635	NCB21EK-104X	CAPACITOR	0.1µF,25V
C1638	NCB21CK-224X	CAPACITOR	0.22µF,16V
C1639	NCB21CK-224X	CAPACITOR	0.22µF,16V
C1640	NCB21CK-224X	CAPACITOR	0.22µF,16V
C1801	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C1901	PECA1173	T CAPACITOR	100µF,4V
C1902	NCBA1HK-332W	CAPACITOR	0.0033µF,50V
C1903	NCB21CK-474X	CAPACITOR	0.47µF,16V
C1904	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C4801	NBE21AM-106X	T CAPACITOR	10µF,10V
C4802	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C4803	NBM90JM-106X	T CAPACITOR	10µF,6.3V
C4804	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4805	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4806	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4808	NCB30JK-105X	CAPACITOR	1µF,6.3V
C4809	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4810	NCFA1HZ-103W	CAPACITOR	0.01µF,50V
C4811	NCFA1HZ-103W	CAPACITOR	0.01µF,50V
C4812	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4813	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4814	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4815	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C4818	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C4819	NCB30JK-105X	CAPACITOR	1µF,6.3V
C4821	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C4851	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C4852	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4853	NBE91AM-335X	T CAPACITOR	3.3µF,10V
C4854	NBE21AM-106X	T CAPACITOR	10µF,10V
C4855	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C4858	NDCA1HJ-330W	CAPACITOR	33pF,50V
C4859	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C4860	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C4861	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C4862	NCBA1HK-102W	CAPACITOR	0.001µF,50V
C4863	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
C4864	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C4865	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
L1601	NQL315K-100X	COIL	10µH

REF No.	PART No.	PART NAME, DESCRIPTION	
L1901	NQL045K-100X	COIL	10µH
L4801	NQL302N-100X	COIL	10µH
L4802	NQL302N-100X	COIL	10µH
L4851	NQR0129-002X	FERRITE BEAD	
L4852	NQL045K-100X	COIL	10µH
L4853	NQL302N-100X	COIL	10µH
S1801	NSW0104-001X	DETECT SWITCH	
CN4001	QGF0507F1-15X	FPC CONNECTOR	
CN4002	QGF0505F2-18X	FPC CONNECTOR	
CN4003	QGF0505F2-11X	FPC CONNECTOR	
CN4004	QGF0505F2-06X	FPC CONNECTOR	
CN4005	QGF0301F1-27X	FPC CONNECTOR	
CN4006	QGF0514F1-22X	FPC CONNECTOR	
CN4007	QGB0503L1-80X	CONNECTOR	
CN4008	QGF0505F2-06X	FPC CONNECTOR	

****

CCD BOARD ASSEMBLY <03>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW2	YB10246A2	CCD BOARD ASSY	
		IC5501	JCY0117	IC	
		IC5502	MM1257AM	IC	
		IC5601	CXA2096N	IC	
		Q5001	2SC3931/CD/-X	TRANSISTOR	
		Q5601	UMZ1N	PAIR TRANSISTOR	
		D5001	1SS355	DIODE	
		R5001	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
		R5002	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R5003	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R5501	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5502	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5503	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5504	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5505	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5506	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5507	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5508	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5509	NRSA6AJ-100W	MG RESISTOR	10Ω,1/16W
		R5510	NRSA6AJ-220W	MG RESISTOR	22Ω,1/16W
		R5511	NRSA6AJ-220W	MG RESISTOR	22Ω,1/16W
		R5601	NRSA6AJ-220W	MG RESISTOR	22Ω,1/16W
		R5602	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
		R5603	NRSA6AJ-182W	MG RESISTOR	1.8kΩ,1/16W
		R5604	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		R5605	NRSA6AJ-183W	MG RESISTOR	18kΩ,1/16W
		R5606	NRSA6AJ-362W	MG RESISTOR	3.6kΩ,1/16W
		R5607	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
		R5610	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
		R5612	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
		C5001	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5002	NBP81DM-155X	T CAPACITOR	1.5µF,20V
		C5003	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5004	NBP81CM-225X	T CAPACITOR	2.2µF,16V
		C5005	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5006	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5007	NCB31HK-222X	CAPACITOR	0.0022µF,50V
		C5501	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5502	NCB21CK-105X	CAPACITOR	1µF,16V
		C5503	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5504	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5505	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5506	NBEE0GM-476X	T CAPACITOR	47µF,4.0V
		C5507	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5508	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5509	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5510	NBP21VM-105X	T CAPACITOR	1µF,35V
		C5511	NBP21DM-475X	T CAPACITOR	4.7µF,20V
		C5512	NBPE1CM-106X	T CAPACITOR	10µF,16V
		C5513	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5514	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5515	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5516	NCFA1AZ-104W	CAPACITOR	0.1µF,10V
		C5517	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5601	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5602	NBM90JM-106X	T CAPACITOR	10µF,6.3V
		C5603	NBM90JM-106X	T CAPACITOR	10µF,6.3V
		C5604	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5605	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5606	NBEE0GM-476X	T CAPACITOR	47µF,4.0V
		C5607	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5608	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C5609	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5610	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5611	NCB21CK-105X	CAPACITOR	1µF,16V
		C5612	NCB21CK-105X	CAPACITOR	1µF,16V
		C5613	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		C5614	NCBA1AK-104W	CAPACITOR	0.1µF,10V
		L5001	NQL302N-100X	COIL	10µH
		L5501	NQL302N-100X	COIL	10µH
		L5502	NQR0129-002X	FERRITE BEAD	
		L5503	NQR0129-002X	FERRITE BEAD	
		L5504	NQR0129-002X	FERRITE BEAD	
		L5601	NQL302N-100X	COIL	10µH
		X5501	NAX0302-001X	CRYSTAL RESONATOR	
		CN5001	QGB0503L1-30X	CONNECTOR	
		OT1	LY30016-0M4A	SPACER-A	
		OT2	LY30016-0D3A	SPACER-A	

****

MONITOR BOARD ASSEMBLY <04>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW	YB10250C	MONITOR BOARD ASSY	
		IC7201	CXA3017R	IC	
		IC7202	TK11900M	IC	
		IC7203	X25057M8-2.7-X	IC	
		IC7204	TC7S32FU	IC(DIGITAL)	
		IC7205	TA75W393FU	IC	
		IC7206	TC7WH126FU	IC	
		IC7207	TC7WH125FU	IC	
		IC7209	XC62FP2802M	IC	
		Q7202	UMZ1N	PAIR TRANSISTOR	
		Q7203	2SA1774/RS/-X	TRANSISTOR	
		Q7501	2SC4617/QR/-X	TRANSISTOR	
		Q7503	DTA114EE	TRANSISTOR	
		Q7504	FP211	PAIR TRANSISTOR	
		R7004	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R7005	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R7006	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R7008	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R7110	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7112	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7113	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7114	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7115	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7116	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7117	NRSA6AJ-393W	MG RESISTOR	39kΩ,1/16W
R7118	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7119	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7120	NRSA6AJ-563W	MG RESISTOR	56kΩ,1/16W
R7121	NRSA6AJ-221W	MG RESISTOR	220Ω,1/16W
R7122	NRSA6AJ-221W	MG RESISTOR	220Ω,1/16W
R7123	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7124	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7126	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7129	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7130	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7131	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7132	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7133	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7247	NRVA6AD-243W	CMF RESISTOR	24kΩ,1/16W
R7248	NRVA63D-334X	CMF RESISTOR	330kΩ,1/16W
R7249	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7250	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7251	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R7252	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R7253	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7254	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7255	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7256	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7257	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7258	NRSA6AJ-563W	MG RESISTOR	56kΩ,1/16W
R7259	NRVA6AD-911W	CMF RESISTOR	910Ω,1/16W
R7260	NRVA6AD-183W	CMF RESISTOR	18kΩ,1/16W
R7261	NRVA6AD-222W	CMF RESISTOR	2.2kΩ,1/16W
R7262	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7263	NRSA6AJ-101W	MG RESISTOR	100Ω,1/16W
R7264	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7265	NRSA6AJ-104W	MG RESISTOR	100kΩ,1/16W
R7267	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7269	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7270	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7434	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7435	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7436	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R7439	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R7507	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
R7508	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R7509	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
R7510	NRSA6AJ-102W	MG RESISTOR	1kΩ,1/16W
R7514	NRSA6AJ-821W	MG RESISTOR	820Ω,1/16W
C7105	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C7108	NBN01DM-106X	T CAPACITOR	10µF,20V
C7109	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C7123	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C7124	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C7125	NDCA1HJ-220W	CAPACITOR	22pF,50V
C7127	NCB21AK-105X	CAPACITOR	1µF,10V
C7214	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7215	NBN01DM-106X	T CAPACITOR	10µF,20V
C7216	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7217	NCB11CK-105X	CAPACITOR	1µF,16V
C7218	NBEE0GM-476X	T CAPACITOR	47µF,4.0V
C7235	NBP21CM-105X	T CAPACITOR	1µF,16V
C7236	NBE91CM-105X	T CAPACITOR	1µF,16V
C7239	NBP71VM-106X	T CAPACITOR	10µF,35V
C7240	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C7241	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C7242	NBE80JM-335X	T CAPACITOR	3.3µF,6.3V
C7243	NCBA1EK-682W	CAPACITOR	0.0068µF,25V
C7244	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C7245	NCB21CK-474X	CAPACITOR	0.47µF,16V
C7246	NBN01DM-106X	T CAPACITOR	10µF,20V
C7247	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7248	NCB21CK-474X	CAPACITOR	0.47µF,16V
C7249	NCB21CK-474X	CAPACITOR	0.47µF,16V
C7250	NCB21CK-474X	CAPACITOR	0.47µF,16V
C7251	NCBA1CK-103W	CAPACITOR	0.01µF,16V
C7252	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C7253	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C7254	NCB30JK-105X	CAPACITOR	1µF,6.3V
C7255	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7256	NCB21CK-334X	CAPACITOR	0.33µF,16V
C7257	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7258	NCB30JK-105X	CAPACITOR	1µF,6.3V
C7259	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C7260	NCBA1AK-104W	CAPACITOR	0.1µF,10V
C7261	NBE90JM-106X	T CAPACITOR	10µF,6.3V
C7262	NCBA1HK-391W	CAPACITOR	390pF,50V
C7502	NBE41AM-476X	T CAPACITOR	47µF,10V
C7503	NFV41HJ-153X	MPPS CAPACITOR	0.015µF,50V
C7504	NCZ1016-150X	CAPACITOR	15pF,2kV
C7505	NCZ1016-150X	CAPACITOR	15pF,2kV
L7202	NQL38DK-220X	COIL	22µH
L7204	NQL144K-100X	COIL	10µH
L7205	NQL144K-220X	COIL	22µH
L7206	NQL38DK-220X	COIL	22µH
L7207	NQL38DK-220X	COIL	22µH
L7211	NQL144K-100X	COIL	10µH
L7212	NQL144K-220X	COIL	22µH
L7501	NQLZ008-100X	COIL	10µH
L7502	NQLZ007-101X	COIL	100µH
TH7501	NAD0019-471X	P THERMISTOR	
T7501	NQS0035-001	SW TRANSF	
WR1	YU40017-030-4	THIN WIRE	
CN7401	QGF0515F1-22X	FPC CONNECTOR	
CN7402	QGF0515F1-26X	FPC CONNECTOR	
CN7403	QGF0515F1-24X	FPC CONNECTOR	
⚠ F7501	NMFZ006-R40X-K	FUSE	T0.4A
SD1	LY41583-001A	S.SHEET(MON.PWB	

＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊

VF BL BOARD ASSEMBLY <05>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB10251A-01	VF BL BOARD ASSY	
Q7650	2SK2055	MOS FET	

REF No.	PART No.	PART NAME, DESCRIPTION	
R7650	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7651	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7652	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7653	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
C7650	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7651	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7652	NCB31CK-104X	CAPACITOR	0.1µF,16V
C7653	NBP41CM-226X	T CAPACITOR	22µF,16V
L7650	NQL144K-100X	COIL	10µH
BL7650	NLL0007-001	LAMP	
T7650	NQH0004-001X	FB TRANSF	
WR1	YU40017-015-1	THIN WIRE	
CN7650	QGF0503C1-20X	FFC/FPC CONNECTOR	
CN7651	QGF0503C1-16X	FFC/FPC CONNECTOR	
SD1	LY40747-002A	SHIELD SHEET	

****

DSC BOARD ASSEMBLY <06>

REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB10247C-01	DSC BOARD ASSY	
IC8001	JCY0114	IC	
IC8002	UPD4516161AFB12	IC	
IC8003	M32000D4AFP	IC(MICRO C ROM)	
IC8004	MBV800TA10PNA03	IC(MICRO C ROM)	
IC8005	PST9127N	IC	
IC8501	S-8520E30MC-W	IC	
Q8001	DTC114EE	TRANSISTOR	
Q8002	DTA144EE	TRANSISTOR	
Q8501	CPH6302	MOS FET	
D8001	RB715F	SB DIODE	
D8501	F1J2F	SB DIODE	
R8001	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8002	NRVA6AD-133W	CMF RESISTOR	13kΩ,1/16W
R8003	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8004	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8006	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8007	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8008	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8009	NRSA6AJ-223W	MG RESISTOR	22kΩ,1/16W
R8012	NRVA6AD-104W	CMF RESISTOR	100kΩ,1/16W
R8014	NRSA6AJ-153W	MG RESISTOR	15kΩ,1/16W
R8015	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8016	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8017	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8018	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8019	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8020	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8022	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8023	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8024	NRSA6AJ-472W	MG RESISTOR	4.7kΩ,1/16W
R8025	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8027	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R8028	NRSA6AJ-103W	MG RESISTOR	10kΩ,1/16W
R8501	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
R8502	NRSA6AJ-0R0W	MG RESISTOR	0Ω,1/16W
RA8001	NRZ0034-100W	NETWORK RESISTOR	10Ω
RA8002	NRZ0034-100W	NETWORK RESISTOR	10Ω
RA8003	NRZ0034-100W	NETWORK RESISTOR	10Ω

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	RA8004	NRZ0034-100W	NETWORK RESISTOR	10Ω
	C8001	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8002	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8003	NBE90JM-106X	T CAPACITOR	10µF,6.3V
	C8004	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8005	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8006	NCB31HK-392X	CAPACITOR	0.0039µF,50V
	C8007	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8008	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8009	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8010	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8011	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8012	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8013	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C8014	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8015	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8016	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8017	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8018	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8019	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8020	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8021	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8022	NBE90JM-106X	T CAPACITOR	10µF,6.3V
	C8023	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8024	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8025	NCBA1HK-102W	CAPACITOR	0.001µF,50V
	C8026	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8027	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8028	NCBA1HK-102W	CAPACITOR	0.001µF,50V
	C8029	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8030	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8031	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8032	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8033	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8034	NBE90JM-106X	T CAPACITOR	10µF,6.3V
	C8035	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8036	NCBA1AK-104W	CAPACITOR	0.1µF,10V
	C8037	NBEE0GM-476X	T CAPACITOR	47µF,4.0V
	C8501	NBE41AM-476X	T CAPACITOR	47µF,10V
	C8503	NCB20JK-225X	CAPACITOR	2.2µF,6.3V
	C8504	NBE40JM-476X	T CAPACITOR	47µF,6.3V
	L8001	NQR0129-002X	FERRITE BEAD	
	L8002	NQR0129-002X	FERRITE BEAD	
	L8003	NQR0129-002X	FERRITE BEAD	
	L8004	NQL302N-100X	COIL	10µH
	L8501	NQL39CM-220X	COIL	22µH
	L8502	NQL04DM-4R7X	COIL	4.7µH
	X8001	NAX0295-001X	CXO	
	CN8001	NNZ0027-001	MMC CONNECTOR	
	CN8002	QGB0503L1-80X	CONNECTOR	
⚠	F8501	NMFZ006-R50X-K	FUSE	T0.5A
	OT1	LY30016-0M5A	SPACER-A	
	OT2	LY30016-042A	SPACER-A	
	OT3	LY41754-001A	SHEET (DSC PWB)	

* * *

STROBE BOARD ASSEMBLY <07>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB10249B	STROBE BOARD ASSY	
	IC6502	TC7SET08FU	IC(DIGITAL)	
	Q6501	2SB1462J/RS/-X	TRANSISTOR	
	Q6502	UN9211J	TRANSISTOR	
		or DTC114EE	TRANSISTOR	
⚠	Q6503	2SB1124/ST/-X	TRANSISTOR	
	Q6504	2SD1628/FG/-X	TRANSISTOR	
	Q6506	CT25ASJ-8-X	TRANSISTOR	
	D6501	F1F16	DIODE	
	D6502	DA121	DIODE	
	D6503	F1SN4	DIODE	
	D6504	CRG02	DIODE	
	R6501	NRSA63J-3R9X	MG RESISTOR	3.9Ω,1/16W
	R6502	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
	R6504	NRSA6AJ-471W	MG RESISTOR	470Ω,1/16W
	R6505	NRSA6AJ-222W	MG RESISTOR	2.2kΩ,1/16W
	R6506	NRSA6AJ-152W	MG RESISTOR	1.5kΩ,1/16W
	R6507	NRSA02J-106X	MG RESISTOR	10MΩ,1/10W
	R6508	NRVA63D-184X	CMF RESISTOR	180kΩ,1/16W
	R6511	NRSA6AJ-473W	MG RESISTOR	47kΩ,1/16W
	R6514	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
	R6515	NRS181J-220X	MG RESISTOR	22Ω,1/8W
	R6516	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
	R6519	NRSA02J-106X	MG RESISTOR	10MΩ,1/10W
	R6520	NRSA6AJ-330W	MG RESISTOR	33Ω,1/16W
	R6527	NRSA6AJ-391W	MG RESISTOR	390Ω,1/16W
	C6501	NBE41AM-336X	T CAPACITOR	33μF,10V
	C6502	NBE41AM-226X	T CAPACITOR	22μF,10V
	C6503	NCBA1CK-103W	CAPACITOR	0.01μF,16V
	C6506	NCZ1008-333X	CAPACITOR	0.033μF,250V
	C6507	NCZ1019-273X	CAPACITOR	0.027μF,250V
	C6508	NCBA1CK-103W	CAPACITOR	0.01μF,16V
	C6509	NCZ1024-103X	CAPACITOR	0.01μF
	C6512	QEZ0450-326	E CAPACITOR	32μF
	L6501	NQS0015-002	SW TRANSF	
	L6502	NQL302N-100X	COIL	10μH
	L6503	NQL044K-470X	COIL	47μH
	HD1	LY41512-001A	HOLDER(STR)ASSY	
	WR1	QAL0166-001	FPC	
	J6501	QUB490-02A2A2	WIRE	
	J6502	QUB499-02A2A2	WIRE	
	CN6501	QGF0513F2-12X	FPC CONNECTOR	
	UN1	LY31121-001C	STROBE ASSY	
	OT1	LY30018-037A	SPECIAL SCREW	
	OT2	LY30016-0T2A	SPACER-A	
	OT3	LY41619-001A	SHEET(ST.PWB)	
	OT4	LY30016-0F6A	SPACER-A	

* * *

W/B BOARD ASSEMBLY <08>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW2	YB10248A2-04	W/B BOARD ASSY	
	Q91	RPM-22PB	PHOTO TRANSISTOR	
	R91	NRSA63J-302X	MG RESISTOR	3kΩ,1/16W
	C91	NBE90JM-106X	T CAPACITOR	10μF,6.3V
	C92	NCB21EK-683X-R	CAPACITOR	0.068μF,25V
	L91	NQR0265-001X	FERRITE BEAD	
	WR1	WJM0077-001B	E-SI C WIRE C-F	
	CN92	QGA1001F1-02X	CONNECTOR	

* * *

JACK BOARD ASSEMBLY <09>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW1	YB10248B1-01	JACK BOARD ASSY	
	Q2851	2SD1979/S/-X	TRANSISTOR	
	D2852	MA8068	ZENER DIODE	
	R2851	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
	R2852	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R2853	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R2854	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	C2854	NCB31HK-472X	CAPACITOR	0.0047μF,50V
	C2855	NCB31HK-102X	CAPACITOR	0.001μF,50V
	C2856	NCB31HK-122X	CAPACITOR	0.0012μF,50V
	C2860	NCB31HK-102X	CAPACITOR	0.001μF,50V
	C2861	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	C2862	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	C2863	NBE40GM-107X	T CAPACITOR	100μF,4.0V
	C2864	NBE40GM-107X	T CAPACITOR	100μF,4.0V
	L2851	NQR0251-004X	FERRITE BEAD	
	L2852	NQR0251-004X	FERRITE BEAD	
	L2853	NQR0251-004X	FERRITE BEAD	
	J2851	QNS0078-001	3.5 JACK	
	CN2851	QGF0513F1-08X	FPC CONNECTOR	

* * *

OPERATION UNIT <10>

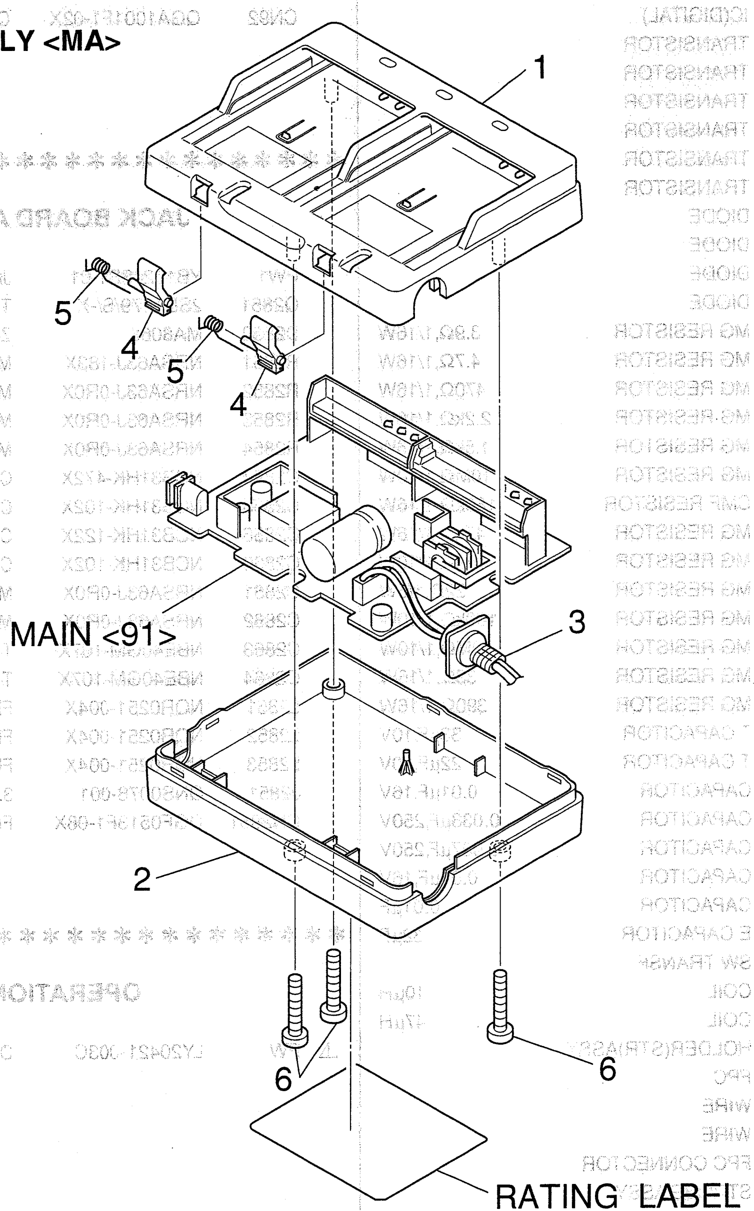
# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	PW	LY20421-003C	OPERATION UNIT

SECTION 6
AC POWER ADAPTER (AA-V50EG/EK)

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

6.1 CABINET ASSEMBLY <MA>



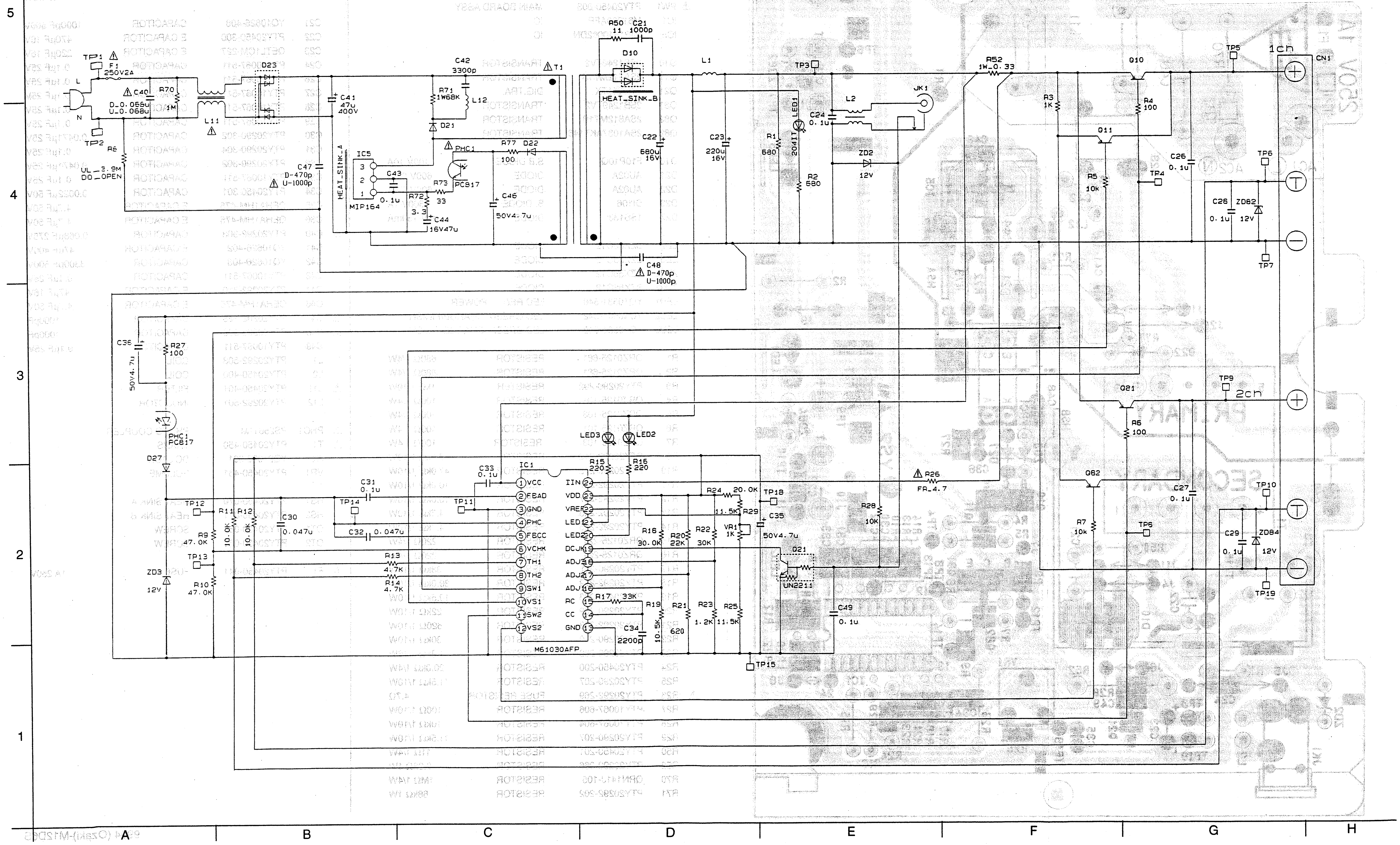
CABINET ASSEMBLY <MA>

#⚠REF NO.	PART NO.	PART NAME, DESCRIPTION
1	PTY20450-012	UPPER CASE ASSY
2	PTY20450-017	LOWER CASE ASSY
⚠ 3	PTY21032-007	AC POWER CORD FOR EG
⚠	PTY21032-008	AC POWER CORD FOR EK
4	PTY20450-050	LOCK LEVER,X2
5	PTY20450-051	LOCK SPRING,X2
6	PTY20292-165	SCREW,X3

6.2 SCHEMATIC DIAGRAM

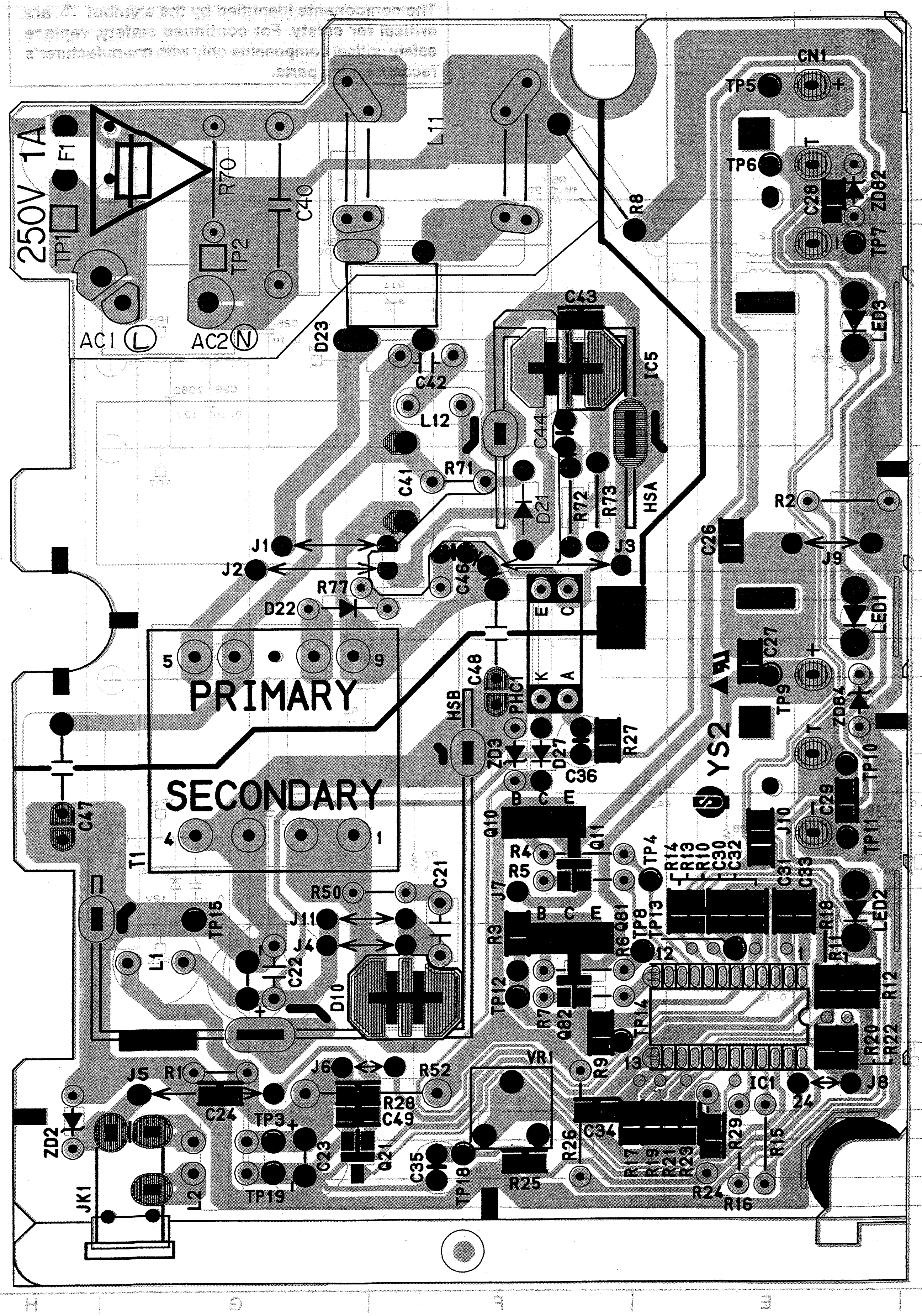
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

Safety precautions
The components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.



5
4
3
2
1
A
B
C
D
E
F
G
H
TP1
⚠ F1 250V2A
L
N
TP2
⚠ C40
D-0.055u
U-0.068u
R70 1M
L11 ⚠
R6
UL-3.9M
DO-OPEN
D23
C41 47u 400V
C47 D-470p ⚠ U-1000p
HEAT_SINK_A
IC5
MIP164
C43 0.1u
R72 3.3
R73 33
C44 16V47u
C42 3300p
R71 1W68K
L12
D21
⚠ PHC1 PC817
R77 100
D22
C46 50V4.7u
⚠ T1
R50 11
C21 1000p
D10
HEAT_SINK_B
C22 680u 16V
C48 ⚠ D-470p U-1000p
L1
C23 220u 16V
TP3
R1 680
LED1 204IT
R2 680
C24 0.1u
L2
JK1
ZD2 12V
R52 1W_0.33
R3 1K
Q10
R4 100
Q11
R5 10k
TP4
C26 0.1u
TP5
1ch
CN1
TP6
C28 0.1u
ZD82 12V
TP7
C36 50V4.7u
R27 100
PHC1 PC817
D27
ZD3 12V
TP12
TP13
R9 47.0K
R10 47.0K
R11 10.0K
R12 10.0K
C30 0.047u
C31 0.1u
TP14
C32 0.047u
R13 4.7K
R14 4.7K
C33 0.1u
TP11
IC1
1 VCC
2 FBAD
3 GND
4 PHC
5 FBCC
6 VCHK
7 TH1
8 TH2
9 SW1
10 VS1
11 SW2
12 VS2
IIN 24
VDD 23
VREF 22
LED1 21
LED2 20
DCJK 19
ADJ 18
ADJ 17
ADJ 16
RC 15
CC 14
GND 13
M61030AFP
LED3
LED2
R15 220
R16 220
R17 33K
R19 10.5K
C34 2200p
R21 620
R23 1.2K
R25 11.5K
R24 20.0K
R29 11.5K
R18 30.0K
R20 22K
R22 30K
VR1 1K
TP18
C35 50V4.7u
Q21 UN2211
C49 0.1u
TP15
⚠ R26 FR_4.7
R28 10K
Q21
R6 100
TP9
2ch
Q82
R7 10k
TP8
C27 0.1u
TP10
C29 0.1u
ZD84 12V
TP19

6.3 CIRCUIT BOARD


250V 1A
F1
TP1
TP2
R70
C40
AC1 Ⓛ
AC2 Ⓝ
L11
R8
CN1
TP5
TP6
C28
ZD82
TP7
LED3
D23
C43
IC5
C42
L12
C44
R71
C41
D21
R72
R73
HSA
R2
J1
J2
J3
R77
D22
C46
C26
J9
LED1
5
9
PRIMARY
SECONDARY
4
1
C48
HSB
PHC1
E
C
K
A
ZD3
D27
C36
R27
YS2
C27
TP9
ZD84
TP10
C47
T1
Q10
B C E
Q11
R4
R5
TP4
R14
R13
R10
C30
C32
J10
C29
TP11
C31
C33
R18
LED2
R50
C21
TP15
J11
J4
J7
R3
Q81
R6
TP8
TP13
12
R11
R12
L1
C22
D10
TP12
R7
Q82
TP14
R20
R22
13
R9
J5
R1
J6
R52
VR1
IC1
24
J8
R28
C49
C24
TP3
C23
Q21
C35
TP18
R25
R26
C34
R17
R19
R21
R23
R29
R15
R24
R16
ZD2
JK1
L2
TP19

6.4 ELECTRICAL PARTS LIST

✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱

MAIN BOARD ASSEMBLY <91>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
⚠	PW1	PTY20450-003	MAIN BOARD ASSY	
	IC1	M61030AFP	IC	
	IC5	MIP1640002DN	IC	
	Q10	2SB1240TV2	TRANSISTOR	
	Q11	2SA812MT1B	TRANSISTOR	
	Q21	UN2211TX	DIG.TRA.	
	Q81	2SB1240TV2	TRANSISTOR	
	Q82	2SA812MT1B	TRANSISTOR	
	Q82	2SA1037AKT146	TRANSISTOR	
	D10	F10P10Q	S.B DIODE	100V 10A
	D21	AU02A	DIODE	600V 0.8A
	D22	AU02A	DIODE	600V 0.8A
	D23	DI106	B. DIODE	600V 1A
	D27	1SS133	DIODE	80V 130mA
	ZD2	BZX55C12	DIODE	
	ZD3	BZX55C12	DIODE	
	ZD82	BZX55C12	DIODE	
	ZD84	BZX55C12	DIODE	
	LED1	YQ10531-540	LED RED POWER	
	LED2	YQ10531-542	LED GREEN CHARGE/FINISH	
	LED3	YQ10531-542	LED GREEN CHARGE/FINISH	
	R1	QRZ0125-681	RESISTOR	680Ω 1/4W
	R2	QRZ0125-681	RESISTOR	680Ω 1/4W
	R3	PTY20290-202	RESISTER	1kΩ 1/10W
	R4	QRZ0125-101	RESISTOR	100Ω 1/4W
	R5	QRZ0125-103	RESISTOR	100Ω 1/4W
	R6	QRZ0125-101	RESISTOR	100Ω 1/4W
	R7	QRZ0125-103	RESISTOR	100Ω 1/4W
	R9	PTY20290-212	RESISTOR	47.0kΩ 1/10W
	R10	PTY20290-212	RESISTOR	47.0kΩ 1/10W
	R11	PTY20292-227	RESISTOR	10.0kΩ 1/10W
	R12	PTY20292-227	RESISTOR	10.0kΩ 1/10W
	R13	PTY20292-225	RESISTOR	4.7kΩ 1/10W
	R14	PTY20292-225	RESISTOR	4.7kΩ 1/10W
	R15	QRZ0125-221	RESISTOR	220Ω 1/4W
	R16	QRZ0125-221	RESISTOR	220Ω 1/4W
	R17	PTY20290-211	RESISTOR	33kΩ 1/10W
	R18	PTY20292-279	RESISTOR	30.0kΩ 1/10W
	R19	PTY20450-203	RESISTOR	10.5kΩ 1/10W
	R20	PTY20290-209	RESISTOR	22kΩ 1/10W
	R21	PTY20292-253	RESISTOR	620Ω 1/10W
	R22	PTY20290-210	RESISTOR	30kΩ 1/10W
	R23	PTY20290-203	RESISTOR	1.2kΩ 1/10W
	R24	PTY20450-200	RESISTOR	20.0kΩ 1/4W
	R25	PTY20290-207	RESISTOR	11.5kΩ 1/10W
⚠	R26	PTY20292-269	FUSE RESISTOR	4.7Ω
	R27	PTY10067-606	RESISTOR	100Ω 1/10W
	R28	PTY10067-604	RESISTOR	10kΩ 1/10W
	R29	PTY20290-207	RESISTOR	11.5kΩ 1/10W
	R50	PTY20450-201	RESISTOR	11Ω 1/4W
	R52	PTY20292-266	RESISTOR	0.33Ω 1W
	R70	QRN141J-105	RESISTOR	1MΩ 1/4W
	R71	PTY20292-202	RESISTOR	68kΩ 1W
	R72	QRZ0125-3R3	RESISTOR	3.3Ω 1/4W
	R73	PTY20450-202	RESISTOR	33Ω 1/4W
	R77	QRZ0125-101	RESISTOR	100Ω 1/4W
	J10	PTY20450-204	RESISTOR	0Ω 1/8W
	C21	YQ10626-408	CAPACITOR	1000pF 500V
	C22	PTY20450-300	E CAPACITOR	470µF 16V
	C23	QETL1CM-227	E CAPACITOR	220µF 16V
	C24	PTY10067-511	CAPACITOR	0.1µF 25V
	C26	PTY10067-511	CAPACITOR	0.1µF 25V
	C27	PTY10067-511	CAPACITOR	0.1µF 25V
	C28	PTY10067-511	CAPACITOR	0.1µF 25V
	C29	PTY10067-511	CAPACITOR	0.1µF 25V
	C30	PTY20290-302	CAPACITOR	0.0471µF 25V
	C31	PTY20290-304	CAPACITOR	0.1µF 25V
	C32	PTY20290-302	CAPACITOR	0.0471µF 25V
	C33	PTY10067-511	CAPACITOR	0.1µF 25V
	C34	PTY20450-301	CAPACITOR	0.0022µF 50V
	C35	QEHA1HM-475	E CAPACITOR	4.7µF 50V
	C36	QEHA1HM-475	E CAPACITOR	4.7µF 50V
⚠	C40	PTY20292-303	CAPACITOR	0.068µF 275V
	C41	YQ10626-402	E CAPACITOR	47µF 400V
	C42	YQ10626-403	CAPACITOR	3300pF 500V
	C43	PTY10067-511	CAPACITOR	0.1µF 25V
	C44	PTY20292-310	E CAPACITOR	47µF 16V
	C46	QEHA1HM-475	E CAPACITOR	4.7µF 50V
⚠	C47	PTY20292-368	CAPACITOR	1000pF
⚠	C48	PTY20292-368	CAPACITOR	1000pF
	C49	PTY10067-511	CAPACITOR	0.1µF 25V
	L1	PTY20292-503	COIL	
	L2	PTY20450-400	COIL	
⚠	L11	PTY20450-401	FILTER	
	L12	PTY20292-501	INDUCTOR	
⚠	PHC1	PS25611M	PHOTO COUPLER	
⚠	T1	PTY20450-450	TRANS	
	JK1	YQ21032-301	DC JACK	
	VR1	PTY20450-451	VOLUME	
	HS1	PTY20450-070	HEAT SINK A	
	HS2	PTY20450-071	HEAT SINK B	
	OT1	PTY20450-060	SCREW	
	OT2	PTY20450-061	SCREW	
⚠	F1	PTY20450-041	FUSE	1A 250V

V24090

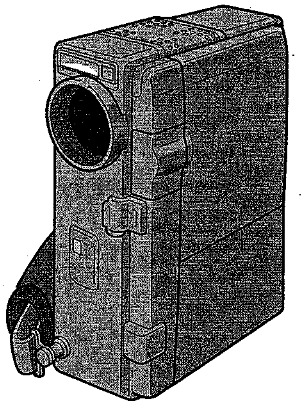
JVC

SERVICE MANUAL

DIGITAL VIDEO CAMERA

ACHTUNG
Dieses Service Manual dient nur zur Referenz. Wartungen/Reparaturen werden generell zentral oder in dafür autorisierten Service Centern durchgeführt. Nähere Informationen hierzu können Sie im ISDN-Infotip bzw. über die JVC-Hotline (06031) 939-3 erfragen.
Zubehör- u. Gehäuseteile sind bestellbar, sonstige Ersatzteile werden nur auf besondere Anfrage geliefert. Bei Fremdeingriffen bestehen keine Gewährleistungsansprüche, Kulanzregelungen sind daher ausgeschlossen.

GR-DVX7EA/70A/70SH



Mini DV PAL

DSC DIGITAL STILL CAMERA

IrTranP

Regarding service information other than these sections, refer to the GR-DVX7EK service manual (No. 86494). Also, be sure to note important safety precautions provided in the service manual. V23337# 2018/92

206

SPECIFICATIONS *(The specifications shown pertain specifically to the model GR-DVX70A/SH)*

Camcorder

For General

Power supply : DC 6.3 V ⎓ (Using the AC Power Adapter/Charger)
DC 7.2 V ⎓ (Using battery pack)
Power consumption
LCD monitor off, viewfinder on : Approx. 4.5 W
LCD monitor on, viewfinder off : Approx. 5.4 W
Dimensions : 48 (W) x 119 (H) x 89 (D) mm
(with the LCD monitor closed and the viewfinder pushed back in)
Weight : Approx. 440 g (without grip strap, cassette, MultiMediaCard and battery)
Approx. 525 g (incl. grip strap, cassette, MultiMediaCard and battery)
Operating temperature : 0°C to 40°C
Operating humidity : 35% to 80%
Storage temperature : –20°C to 50°C
Pickup : 1/4" CCD
Lens : F 1.8, f = 3.6 to 36 mm, 10:1 Power Zoom Lens
Filter diameter : ø27 mm
LCD monitor : 2.5" diagonally measured, LCD panel/TFT active matrix system
Viewfinder : Electronic viewfinder with 0.55" colour LCD
Speaker : Monaural

For Digital Video Camera

Format : DV Format (SD mode)
Signal format : PAL Standard
Video signal recording format : Digital Component Recording
Cassette : Mini DV Cassette
Tape Speed : SP: 18.8 mm/s
LP: 12.5 mm/s
Maximum recording time : SP: 60 min.
LP: 90 min. (using M-DV60ME cassette)

For Digital Still Camera

Storage media : MultiMediaCard
Compression system : JPEG (compatible)
Picture quality : 3 modes (FINE/STANDARD/ECONOMY)
Number of storable images
(with the provided MultiMediaCard [4 MB])
FINE : Approximately 30
STANDARD : Approximately 50
ECONOMY : Approximately 100
Infrared transmitter/receiver : IrDA Ver. 1.0 (IrTran-P compatible)

For Connectors

Video output : 1 Vp-p, 75 Ω unbalanced, analogue output (via AV OUT connector)
Audio output : –8 dBs, 1 kΩ analogue output, stereo (via AV OUT connector)
Headphone output : ø3.5 mm, stereo (via AV OUT connector)
DV input/output : 4-pin, IEEE1394 compliant

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

AC Power Adapter/Charger AA-V50A or AA-V50SH

Power requirement : AC 110 V to 240 V∿, 50/60 Hz
Power consumption : 20 W
Output
Charge : DC 7.2 V ⎓, 0.63 A
VTR : DC 6.3 V ⎓, 1.8 A
Dimensions : 122 (W) x 39 (H) x 92 (D) mm
Weight
AA-V50A : Approx. 310 g
AA-V50SH : Approx. 380 g

Docking Station CU-V501E

For General

Dimensions : 115 mm (W) x 31 mm (H) x 55 mm (D)
Weight : Approx. 90 g

For Connectors

S-Video : Y: 1Vp-p, 75 Ω, analogue output
C: 0.29 Vp-p, 75 Ω, analogue output
Video : 1Vp-p, 75 Ω, analogue output
Audio : –8 dBs, 1 kΩ, analogue output
JLIP : ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Editing : ø3.5 mm, 2-pole
PC : ø2.5 mm, 3-pole
External microphone input : –68 dBs, high impedance unbalanced with ø3.5 mm (stereo)

E & O.E. Design and specifications subject to change without notice.

COPYRIGHT © 1999 VICTOR COMPANY OF JAPAN, LTD.

No. 86504
May 1999

TABLE OF CONTENTS

5. PARTS LIST

5.1 PACKING ASSEMBLY <M1> 5-1
5.2 FINAL ASSEMBLY<M2> 5-3

The following table indicate main different points between models GR-DVX7EK, DVX7EA, DVX70A and GR-DVX70SH.

ITEM / MODEL	GR-DVX7EK	GR-DVX7EA	GR-DVX70A	GR-DVX70SH
AC POWER ADAPTER	AA-V50EK	AA-V50EA	AA-V50A	AA-V50SH
ZOOM	100X	200X	←	←
CONNECTOR, CABLE ADAPTER	Provided	Optional	←	←
CONVERSION PLUG	Optional	Provided	←	←

Note: Mark ← is same as left.

The following table indicate different parts number between models GR-DVX7EK, DVX7EA, DVX70A and GR-DVX70SH.

PACKING ASSEMBLY<M1>

REF. NO.	ITEM / MODEL	GR-DVX7EK	GR-DVX7EA	GR-DVX70A	GR-DVX70SH
1	PACKING CASE	LY31262-005A	LY31262-006A	LY31262-007A	LY31262-008A
22	POLY BAG	YQM30061-3	QPA02003006	←	←
25	GUARANTY CARD	BT-54008-2	–	–	–
⚠ 27	INST. BOOK (EN)	LYT0400-001A	LYT0413-001A	LYT0412-001A	←
⚠	INST. BOOK (CH)	–	–	LYT0412-002A	←
⚠	INST. BOOK (RU)	–	–	LYT0412-003A	←
⚠ 28	INST. BOOK (SOFT. SETUP)	LYT0428-001A	←	LYT0429-001A	←
40	CONNECTOR, CABLE ADAPTER	PEMC1000-01-02	–	–	–
45	SER. NET CARD	–	BT-56002-2	–	–
46	WARRANTY CARD	–	BT-56001-2	–	–
47	CONVERSION PLUG	–	–	PEMC1012-02	–
48	CAUTION SHEET	–	–	YU42117	–

FINAL ASSEMBLY <M2>

REF. NO.	ITEM / MODEL	GR-DVX7EK	GR-DVX7EA	GR-DVX70A	GR-DVX70SH
106	CASS. COVER ASSY	LY20444-006B	LY20444-004C	LY20444-004D	LY20444-004C
⚠ 121	UPPER CASE ASSY	LY20422-003E	LY20422-002F	←	LY20422-002E
121Q	SPACER-A	–	LY30016-0W5A	←	←
124	FRONT COVER ASSY	LY20424-006B	LY20424-004C	←	←
147	SPECIAL SCREW	LY30018-065A,X4	LY30018-065A,X3	←	←
227	SPECIAL SCREW	–	LY30018-022A	←	←

Note: Mark – is not used. Mark ← is same as left.

–MONITOR SECTION–

REF. NO.	ITEM \ MODEL	GR-DVX7EK	GR-DVX7EA	GR-DVX70A	GR-DVX70SH
501	MONITOR COVER	LY20425-006B	←	LY20425-007A	←
⚠ 520	MONITOR ASSY	LYH20072-006A	LYH20072-006B	LYH20072-007B	←

SECTION 6 AC POWER ADAPTER

CABINET ASSEMBLY <MA>

REF. NO.	ITEM \ MODEL	GR-DVX7EK	GR-DVX7EA	GR-DVX70A	GR-DVX70SH
⚠ 3	AC POWER CORD	PTY21032-008	PTY20290-020	YQ21032-007	PTY20290-021

Note: Mark ← is same as left.

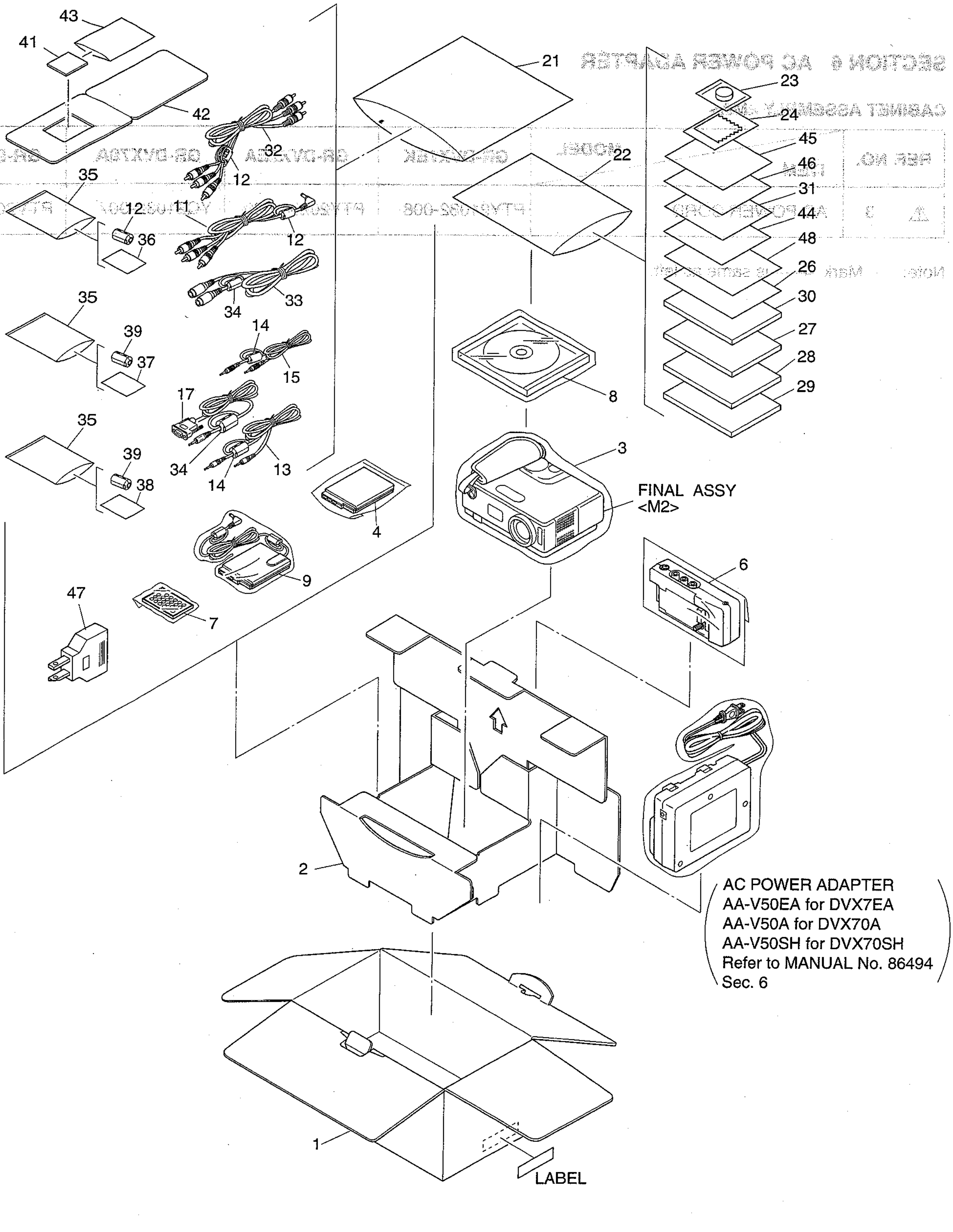
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.


43
41
42
32
12
35
12
11
36
12
33
34
35
39
37
14
15
17
35
39
38
34
14
13
4
9
47
7
21
22
8
3
FINAL ASSY
<M2>
23
24
45
46
31
44
48
26
30
27
28
29
6
2
1
LABEL

AC POWER ADAPTER
AA-V50EA for DVX7EA
AA-V50A for DVX70A
AA-V50SH for DVX70SH
Refer to MANUAL No. 86494
Sec. 6

****

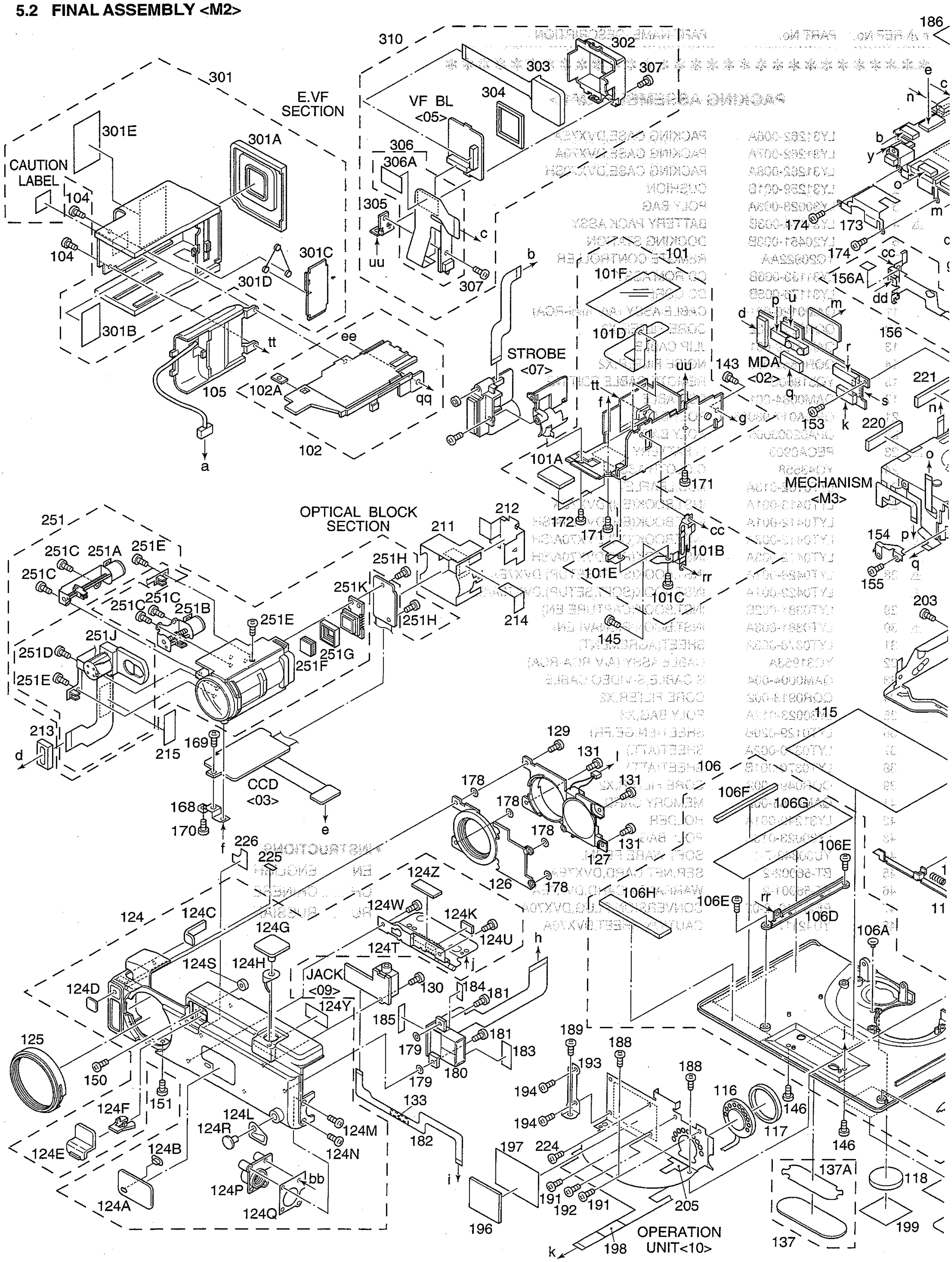
PACKING ASSEMBLY <M1>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	LY31262-006A	PACKING CASE,DVX7EA
		LY31262-007A	PACKING CASE,DVX70A
		LY31262-008A	PACKING CASE,DVX70SH
	2	LY31259-001B	CUSHION
	3	LY30023-003A	POLY BAG
⚠	4	LY31174-003B	BATTERY PACK ASSY
	6	LY20451-003B	DOCKING STATION
	7	YQ20922AA	REMOTE CONTROLLER
	8	LY31133-006B	CD ROM ASSY
	9	LY31176-005B	DC CORD
	11	QAM0120-001	CABLE ASSY (A/V mini-RCA)
	12	QQR0919-002	CORE FILTER,X3
	13	QAM0129-001	JLIP CABLE
	14	QQR0855-003	NOISE FILTER,X2
	15	YQ31950C	REMOTE CABLE,EDITING
	17	QAM0084-001	PC CABLE
	21	QPGA017-03005	POLY BAG
	22	QPA02003006	POLY BAG
⚠	23	PECA0903	LI BATTERY
	24	YQ43558	C.CLOTH ASSY
	26	LYT0162-013A	ACC.LEAFLET
⚠	27	LYT0413-001A	INST.BOOK(EN),DVX7EA
⚠		LYT0412-001A	INST.BOOK(EN),DVX70A/SH
⚠		LYT0412-002A	INST.BOOK(CH),DVX70A/SH
⚠		LYT0412-003A	INST.BOOK(RU),DVX70A/SH
⚠	28	LYT0428-001A	INST.BOOK(SOFT.SETUP),DVX7EA
⚠		LYT0429-001A	INST.BOOK(SOFT.SETUP),DVX70A/SH
	29	LYT0381-002B	INST.BOOK(CAPTURE.EN)
⚠	30	LYT0381-003A	INST.BOOK(PICNAVI.EN)
	31	LYT0378-003A	SHEET(AGREMENT)
	32	YQ31953A	CABLE ASSY (A/V RCA-RCA)
	33	QAM0004-004	S CABLE,S-VIDEO CABLE
	34	QQR0918-002	CORE FILTER,X2
	35	LY30023-012A	POLY BAG,X3
	36	LYT0129-020B	SHEET(EN.GE.FR)
	37	LYT0370-002A	SHEET(ATT.)
	38	LYT0370-001B	SHEET(ATT.)
	39	QQR0491-002	CORE FILTER,X2
	41	QAM0185-002	MEMORY CARD
	42	LY31249-001A	HOLDER
	43	LY30023-013A	POLY BAG
	44	YU30843-7-1	SOFT WARE PERM.
	45	BT-56002-2	SER.NET CARD,DVX7EA
	46	BT-56001-2	WARRANTY CARD,DVX7EA
	47	PEMC1012-02	CONVERSION PLUG,DVX70A
	48	YU42117	CAUTION SHEET,DVX70A

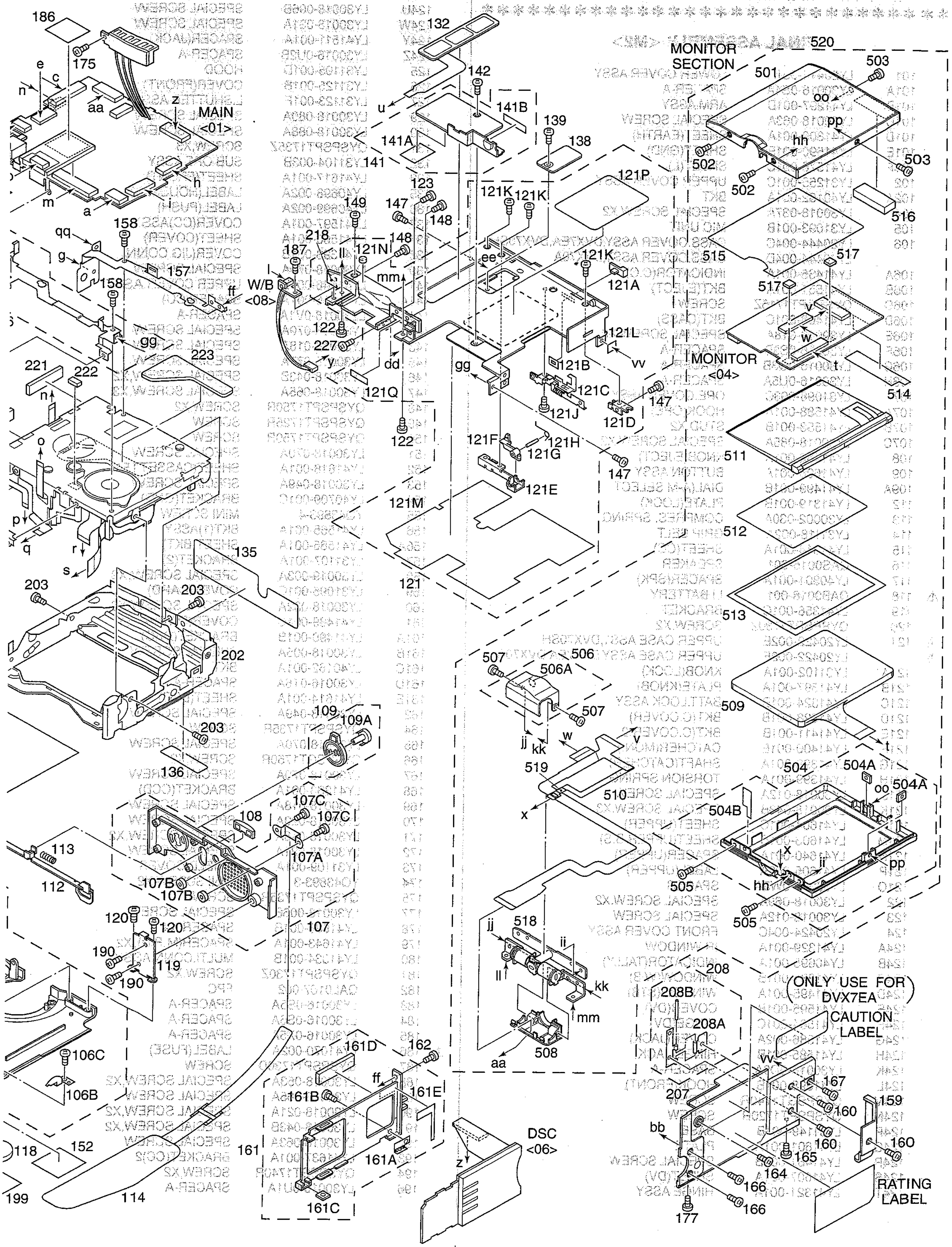
- **INSTRUCTIONS**

EN .... ENGLISH
CH ...... CHINESE
RU ...... RUSSIAN

5.2 FINAL ASSEMBLY <M2>



301
E.VF
SECTION
301E
301A
CAUTION
LABEL
104
104
301C
301D
301B
105
a
102A
102
ee
tt
qq
310
302
303
307
304
VF BL
<05>
306
306A
305
uu
c
307
b
STROBE
<07>
101
101F
101D
uu
tt
f
143
g
101A
171
172
171
cc
101B
101C
101E
rr
145
186
e
n
c
b
y
o
m
174
173
174
156A
cc
dd
d
p
u
m
MDA
<02>
q
r
156
s
153
k
221
220
n
o
MECHANISM
<M3>
154
p
q
155
203
251
251C
251A
251E
251C
251C
251C
251B
251E
251J
251D
251E
213
d
215
OPTICAL BLOCK
SECTION
211
212
251H
251K
251H
214
251G
251F
169
168
170
f
CCD
<03>
e
129
131
178
178
178
131
131
127
126
178
106
106F
106G
115
106E
106E
rr
106H
106D
106A
226
225
124
124C
124Z
124W
124K
124G
124U
124T
j
124S
124H
JACK
<09>
130
184
181
124D
124Y
h
185
181
183
179
179
180
125
150
151
124F
124E
124L
124R
124M
124N
124B
124P
bb
124A
124Q
133
182
i
189
193
188
188
194
194
116
146
117
146
197
224
196
191
192
191
205
OPERATION
UNIT<10>
198
k
137A
118
137
199


186
175
e
c
n
aa
z
MAIN
<01>
h
m
a
158
qq
g
157
ff
158
gg
223
221
222
n
o
p
q
r
s
203
203
202
203
136
135
132
u
142
141B
141A
141
139
138
123
149
147
148
218
187
l
W/B
<08>
ll
121N
148
mm
L
122
227
y
dd
121Q
122
121K
121K
121P
ee
121K
121A
121L
vv
gg
121B
121C
147
121J
121D
121F
121H
121G
147
121E
121M
121
MONITOR
SECTION
520
503
501
oo
pp
hh
503
502
502
516
515
517
517
v
w
MONITOR
<04>
514
511
512
513
509
507
506
506A
507
jj
kk
w
v
519
510
x
504B
504
504A
504A
oo
x
ii
pp
hh
505
505
518
jj
ii
ll
kk
mm
508
aa
208
208B
208A
(ONLY USE FOR
DVX7EA)
CAUTION
LABEL
vv
167
159
160
160
160
165
164
166
166
177
207
bb
RATING
LABEL
DSC
<06>
z
109
109A
108
107C
107C
107A
107B
107B
107
113
112
120
120
190
119
190
106C
106B
118
152
199
114
161D
162
ff
161E
161B
161
161A
161C

****

FINAL ASSEMBLY <M2>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
101	LY20414-001H	LOWER COVER ASSY
101A	LY30016-0S4A	SPACER-A
101B	LY41297-001D	ARM ASSY
101C	LY30018-063A	SPECIAL SCREW
101D	LY41300-001A	SHEET(EARTH)
101E	LY41590-001B	SHEET(GND)
101F	LY41576-001C	SHEET(L)
102	LY31255-001C	UPPER COVER ASSY
102A	LY40162-001A	BKT
104	LY30018-037A	SPECIAL SCREW,X2
105	LY31093-001B	MIC UNIT
106	LY20444-004C	CASS.COVER ASSY,DVX7EA,DVX70SH
	LY20444-004D	CASS.COVER ASSY,DVX70A
106A	LY41435-001A	INDICATOR(C.C)
106B	LY41551-001A	BKT(EJECT)
106C	QYSPSPT1715Z	SCREW
106D	LY41408-001C	BKT(CASS)
106E	LY30018-018A	SPECIAL SCREW,X2
106F	LY30016-0S3B	SPACER-A
106G	LY30016-0Q3B	SPACER-A
106H	LY30016-0U5A	SPACER-A
107	LY31098-003C	OPE.COVER ASSY
107A	LY41588-001A	HOOK(OPE)
107B	LY41553-001B	STUD,X2
107C	LY30018-085A	SPECIAL SCREW,X2
108	LY41452-001A	KNOB(EJECT)
109	LY41608-001A	BUTTON ASSY
109A	LY41499-001B	DIAL(A-M SELECT
112	LY41319-001B	PLATE(LOCK)
113	LY30002-030A	COMPRES. SPRING
114	LY31118-002A	GRIP BELT
115	LY41314-001A	SHEET(CC)
116	QAS0015-001	SPEAKER
117	LY40301-001A	SPACER(SPK)
⚠ 118	QAB0018-001	LI BATTERY
119	LY41356-001C	BRACKET
120	QYSPSPT1730Z	SCREW,X2
⚠ 121	LY20422-002E	UPPER CASE ASSY,DVX70SH
⚠	LY20422-002F	UPPER CASE ASSY,DVX7EA,DVX70A
121A	LY31102-001A	KNOB(LOCK)
121B	LY41397-001A	PLATE(KNOB)
121C	LY41324-001B	BATT.LOCK ASSY
121D	LY41328-001B	BKT(C.COVER)
121E	LY41411-001B	BKT(C.COVER)2
121F	LY41400-001E	CATCHER(MON.)
121G	LY41398-001A	SHAFT(CATCHER)
121H	LY41399-001A	TORSION SPRING
121J	LY30018-012A	SPECIAL SCREW
121K	LY30018-043B	SPECIAL SCREW,X3
121L	LY41604-001C	SHEET(UPPER)
121M	LY41603-001B	SHEET(UPPER B.S)
121N	LY41640-001A	SPACER(UPPER)
121P	LY41605-002A	LABEL(UPPER)
121Q	LY30016-0W5A	SPACER
122	LY30018-069A	SPECIAL SCREW,X2
123	LY30018-012A	SPECIAL SCREW
124	LY20424-004C	FRONT COVER ASSY
124A	LY41329-001A	IR WINDOW
124B	LY40695-001A	INDICATOR(TALLY)
124C	LY41331-001B	WINDOW(W.B)
124D	LY41495-001A	WINDOW(STB)
124E	LY41595-001B	COVER(DV)
124F	LY41584-001C	HINGE(DV)
124G	LY41586-002A	COVER(JACK)
124H	LY41585-001B	HINGE(JACK)
124K	LY30016-0D9A	SPACER-A
124L	LY41598-001B	HOOK(FRONT)
124M	QYSPSGT1740R	SCREW
124N	QYSPSPT1720R	SCREW
124P	LY31149-001B	BASE
124Q	LY41601-001A	PLATE
124R	LY41481-001B	SPECIAL SCREW
124S	LY41607-001A	SHEET(DV)
124T	LY41321-001A	HINGE ASSY
124U	LY30018-006B	SPECIAL SCREW
124W	LY30018-031A	SPECIAL SCREW
124Y	LY41511-001A	SPACER(JACK)
124Z	LY30016-0U2B	SPACER-A
125	LY31105-001D	HOOD
126	LY31125-001B	COVER(FRONT)
127	LY31123-001F	L.SHUTTER ASSY
129	LY30018-080A	SPECIAL SCREW
130	LY30018-088A	SPECIAL SCREW
131	QYSPSPT1735Z	SCREW,X3
132	LY31104-003B	SUB OPE ASSY
133	LY41617-001A	SHEET(FRONT)
135	LY40698-002A	LABEL(HOUSING)
136	LY40699-002A	LABEL(PUSH)
137	LY41597-001A	COVER(CC)ASSY
137A	LY41560-001A	SHEET(COVER)
138	LY41393-001B	COVER(JIG CONN)
139	LY30018-070A	SPECIAL SCREW
141	LY41646-001B	UPPER COVER ASSY
141A	LY41665-001A	SPACER(CU)
141B	LY30016-0V1A	SPACER-A
142	LY30018-070A	SPECIAL SCREW
143	LY30018-018A	SPECIAL SCREW
145	LY30018-077A	SPECIAL SCREW
146	LY30018-043B	SPECIAL SCREW,X2
147	LY30018-065A	SPECIAL SCREW,X3
148	QYSPSPT1750R	SCREW,X2
149	QYSPSPT1725R	SCREW
150	QYSPSPT1750R	SCREW
151	LY30018-070A	SPECIAL SCREW
152	LY41618-001A	SHEET(CASSETTE)
153	LY30018-049A	SPECIAL SCREW
154	LY40709-001C	BRACKET(GND)
155	YQ43893-4	MINI SCREW
156	LY41565-001A	BKT(1)ASSY
156A	LY41566-001A	SHEET(BKT)
157	LY31107-001A	BRACKET(2)
158	LY30019-003A	SPECIAL SCREW,X2
159	LY31095-001C	COVER(CARD)
160	LY30018-032A	SPECIAL SCREW,X3
161	LY41489-001C	COVER(PWB)ASSY
161A	LY41490-001B	BRACKET(DSC)
161B	LY30018-005A	SPECIAL SCREW
161C	LY40162-001A	BKT
161D	LY30016-0T6A	SPACER-A
161E	LY41614-001A	SHEET(DSC)
162	LY30018-049A	SPECIAL SCREW
164	QYSPSPT1735R	SCREW
165	LY30018-070A	SPECIAL SCREW
166	QYSPSGT1750R	SCREW,X2
167	LY30018-070A	SPECIAL SCREW
168	LY41333-001A	BRACKET(CCD)
169	LY30018-018A	SPECIAL SCREW
170	LY30018-020A	SPECIAL SCREW
171	LY30018-018A	SPECIAL SCREW,X2
172	LY30018-021A	SPECIAL SCREW
173	LY31109-001A	SHIELD COVER
174	YQ43893-3	MINI SCREW,X2
175	QYSPSPT1735R	SCREW
177	LY30018-006B	SPECIAL SCREW
178	LY41636-001B	SPACER,X4
179	LY41643-001A	SPACER(M.PIN),X2
180	LY41334-001B	MULTI.CONN.ASSY
181	QYSPSPT1730Z	SCREW,X2
182	QAL0167-002	FPC
183	LY30016-0S5A	SPACER-A
184	LY30016-0S6A	SPACER-A
185	LY30016-0X5A	SPACER-A
⚠ 186	LY41070-002A	LABEL(FUSE)
187	QYSPSPT1730D	SCREW
188	LY30018-053A	SPECIAL SCREW,X2
189	LY30018-065A	SPECIAL SCREW
190	LY30018-021A	SPECIAL SCREW,X2
191	LY30018-043B	SPECIAL SCREW,X2
192	LY30018-063A	SPECIAL SCREW
193	LY41637-001A	BRACKET(CC)2
194	QYSPSGT1740R	SCREW,X2
196	LY30016-0U1A	SPACER-A

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
197	LY30016-0U7A	SPACER-A
198	LY30016-0U9B	SPACER-A
199	LY30016-059A	SPACER-A
202	LY30483-001K	CASSETTE HOUSING ASSY
203	YQ43893-4	MINI SCREW,X3
205	LY41639-001A	SHEET(OPE UNIT)
207	LY20419-001C	BOTTOM COVER
208	LY41312-001C	HINGE ASSY
208A	LY31097-001C	BRACKET
208B	LY41313-001A	SHAFT
211	LY30944-001B	SHIELD CASE(1)
212	LY31286-001B	SHIELD CASE(2)
213	QQR0895-012	FERRITE CORE
214	LY30016-0V3A	SPACER-A
215	LY30016-0U4B	SPACER-A
218	LY30016-0W2A	SPACER-A
220	LY30016-0T4A	SPACER-A
221	LY30016-0T5A	SPACER-A
222	LY30016-0T7A	SPACER-A
223	LY41613-001A	SPACER
224	LY30018-021A	SPECIAL SCREW
225	LY30016-0W3A	SPACER-A
226	LY41669-001A	SPACER
227	LY30018-022A	SPECIAL SCREW

– OPTICAL BLOCK SECTION –

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
251	YS20973D	OPTICAL BLOCK ASSY
251A	LY30723-001A	ZOOM MOTOR
251B	LY30724-001B	FOCUS MOTOR
251C	LY30727-002A	SCREW,X4
251D	LY30018-060A	SPECIAL SCREW
251E	LY30727-001A	SCREW,X3
251F	LY41377-001A	OP LPF
251G	LY30721-001A	SPACER RUBBER
251H	QYSPSGU1750Z	SCREW,X2
251J	LY31135-001A	IRIS MOTOR UNIT
251K	YS40168D	CCD BASE ASSY

– ELECTRONIC VIEWFINDER SECTION –

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 301	LY31087-002E	VF ASSY
301A	LY31089-001A	EYE CUP
301B	LY30016-0J8A	SPACER-A
301C	LY31092-001B	COVER(SLIDE)
301D	LY41308-001A	TORSION SPRING
301E	LY41600-002A	LABEL(CAUTION)
302	LY31110-001B	HOLDER(LCD)
303	QLD0073-001	LCD MODULE
304	LY40127-001A	SPACER(LCD.)
305	LY41338-001A	BRACKET(SW)
306	LY31159-002A	VF FPC ASSY
306A	LY30016-0V5A	SPACER-A
307	QYSPSPT1720D	SCREW,X2
⚠ 310	LYH20074-003B	EVF ASSY

– MONITOR SECTION –

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
501	LY20425-006B	MONITOR COVER,DVX7EA
	LY20425-007A	MONITOR COVER,DVX70A/SH
502	LY30018-006B	SPECIAL SCREW,X2
503	QYSPSPT1720R	SCREW,X2
⚠ 504	LY31111-001E	M.CASE ASSY
504A	LY40162-001A	BKT,X2
504B	LY41668-001A	SHEET(GRAND)
505	LY30018-032A	SPECIAL SCREW,X2
506	LY41361-001B	H.COVER(U)ASSY
506A	LY40663-002A	MAGNET
507	LY30018-060A	SPECIAL SCREW,X2
508	LY31114-001A	HINGE COVER(L)
509	QLD0072-001	LCD MODULE
510	LY31158-001B	MONI.FPC ASSY
511	QLL0060-001	BACK LIGHT
512	LY41387-001A	SHEET
513	LY41514-001B	SHEET(DBEFGUIDE)
514	LY41425-001A	SHIELD SHEET
515	LY41513-001A	S.SHEET(M.COVER)
516	LY30016-0P8A	SPACER-A
517	LY30016-0S9A	SPACER-A,X2
518	LY31112-001C	HINGE ASSY
519	LY30016-0X2A	SPACER-A
⚠ 520	LYH20072-006B	MONITOR ASSY,DVX7EA
⚠	LYH20072-007B	MONITOR ASSY,DVX70A/SH